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# 1990 WATER QUALITY ASSESSMENT REPORT SUSQUEHANNA RIVER BASIN



SUSQUEHANNA RIVER BASIN COMMISSION

RESOURCE QUALITY MANAGEMENT & PROTECTION DIVISION

JANUARY 1990

The Susquehanna River Basin Commission was created as an independent agency by a Federal-Interstate Compact\* among the States of Maryland, New York, Commonwealth of Pennsylvania and the Federal Government. In creating the Commission, the Congress and State Legislatures formally recognized the water resources of the Susquehanna River basin as a regional asset vested with local, State and National interests for which all the parties share responsibility. As the single Federal-Interstate water resources agency with basinwide authority, the Commission's goal is to effect coordinated planning, conservation, management, utilization, development and control of basin water resources among the government and private sectors.

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\* Statutory Citations: Federal - Pub. L. 91-575, 84 Stat. 1509 (December, 1970); Maryland - Natural Resources §8-301 (Michie 1974); New York - ECL §21-1301 (McKinney 1973); and Pennsylvania - 32 P.S. 820.1 (Supp. 1976).

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1990 WATER QUALITY ASSESSMENT REPORT

SUSQUEHANNA RIVER BASIN

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## **PART I: EXECUTIVE SUMMARY**

This report was prepared to meet the requirements of Section 305(b) of the Clean Water Act. The report format follows that requested by the U. S. Environmental Protection Agency in their "Guidelines for the Preparation of 1990 State Water Quality Assessments."

The Susquehanna River drains 27,580 square miles in New York, Pennsylvania and Maryland and contributes over half of the freshwater inflow to the Chesapeake Bay. This report covers 13,268 stream miles assessed out of 21,100 miles of named streams in the basin. The assessments cover the Lower Susquehanna, Juniata and West Branch subbasins in greater detail than the Upper Susquehanna, Chemung and Eastern subbasins. Designated uses are attained in 11,812 stream miles (89% of the total). Ninety-four (94) percent (12,520 stream miles) meet the CWA fishable waters goal and 99% (13,223 stream miles) meet the CWA swimmable waters goal. Metals (mainly from mining activities) are the major cause of degradation; polluting 844 stream miles (58% of impaired stream miles). Nutrient enrichment and sediment from agricultural runoff and municipal waste water discharges account for another 19% of degraded stream miles. At least 885 stream miles have elevated levels of toxic substances, mainly metals.

## PART II: BACKGROUND

The Susquehanna River drains the largest basin on the Atlantic coast of the United States. It originates at Otsego Lake, Otsego County, New York and flows 450 miles to the Chesapeake Bay. The Susquehanna River includes 43% of the Bay's watershed, but contributes 51% of the freshwater entering the Bay.<sup>1</sup> The Susquehanna River Basin is divided into six major subbasins (Figure 1). Major tributaries in the Basin are shown in Table 1.

TABLE 1

### MAJOR TRIBUTARIES IN THE SUSQUEHANNA RIVER BASIN

Stream -----	Drainage area -----
West Branch Susquehanna River	6,955 sq. mi.
Juniata River	3,404
Chemung River	2,595
Chenango River	1,605
Sinnemahoning Creek	1,395
Tioga River	1,388

### Atlas

Basin population: 3,600,000 (1980)

Basin surface area: 27,581 square miles

States in Basin:	New York	6,344 sq. mi.	23%
	Pennsylvania	20,962	76
	Maryland	275	1

Total stream miles: 21,000 - 21,100

<sup>1</sup> Chesapeake Bay Freshwater Inflow Study, Main Report, US Army Corps of Engineers, September 1984.

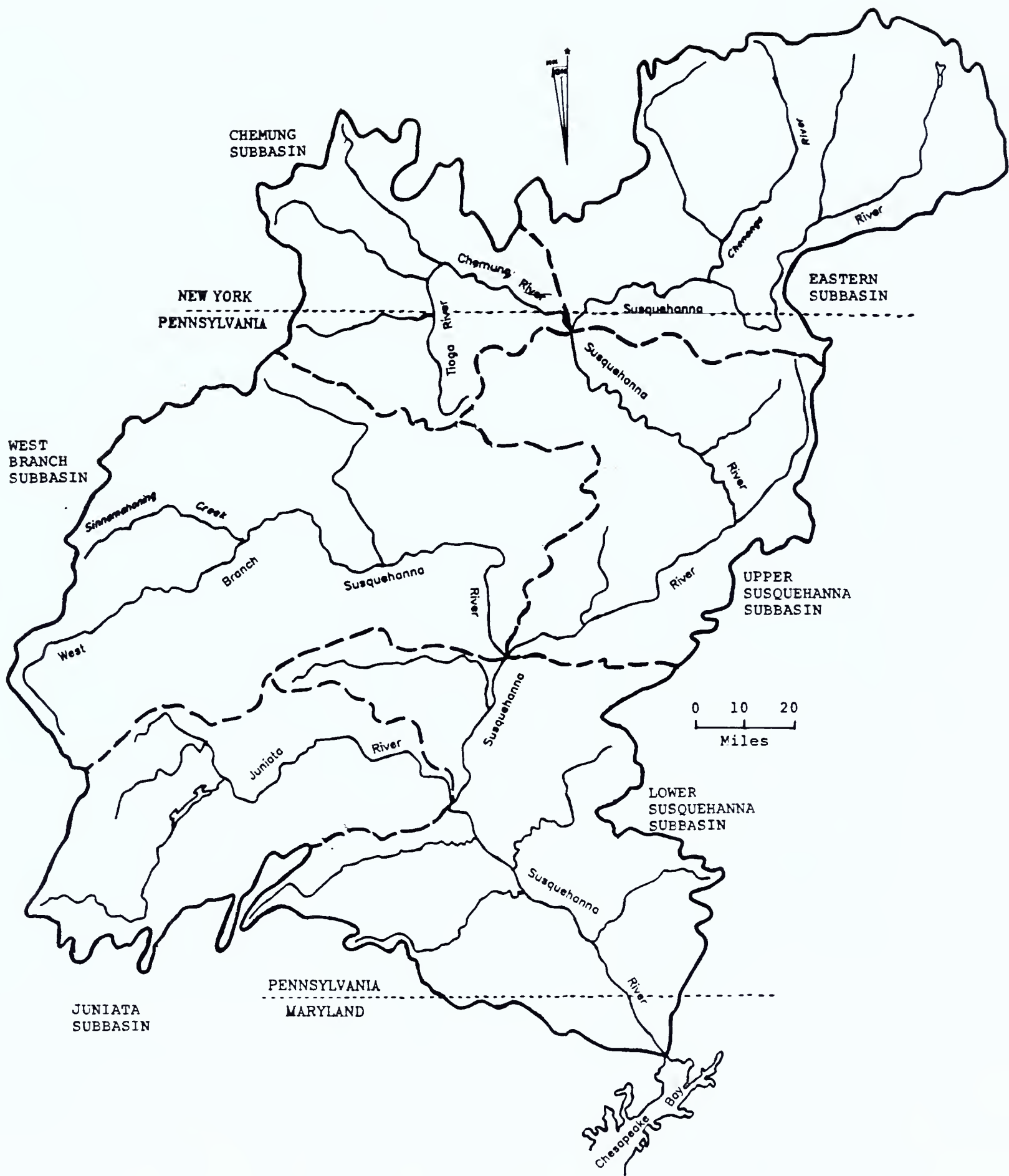


FIGURE 1 - SUSQUEHANNA RIVER BASIN

Summary of classified uses

TABLE 2

SUMMARY OF STREAM CLASSIFICATIONS IN THE SUSQUEHANNA RIVER BASIN

<u>State - classification*</u>	<u>Total Miles</u>	<u>Fishable</u>	<u>Swimmable</u>
New York - A	19.0	19.0	19.0
B	318.1	318.1	318.1
C	545.5	545.5	545.5
D	117.0	114.2	114.2
Pennsylvania - WWF	3,157.4	2,790.8	3,140.2
HQ-WWF	15.7	15.7	15.7
TSF	1,479.3	1,444.9	1,477.5
HQ-TSF	281.4	274.4	281.4
CWF	3,809.0	3,528.4	3,786.0
HQ-CWF	3,200.0	3,143.1	3,200.0
EV	222.3	222.3	222.3
Maryland - I	44.7	44.7	44.7
II	0.0	0.0	0.0
III	50.0	50.0	50.0
IV	8.6	8.6	8.6
-----	-----	-----	-----
Total	13,268.0	12,519.7	13,223.2

\* see page A-1



## PART III: SURFACE WATER ASSESSMENT

### Chapter 1: Summary Data

#### Methodology

Assessments for stream reaches are stored in a computer database. Assessments have been entered into the database over the past two years and the database covers 60% of the Basin as of October 1989. This coverage includes all named streams in the Lower Susquehanna, Juniata and West Branch Subbasins, and most of the larger streams in the Upper Susquehanna and Eastern Subbasins. To date, no assessments have been entered for the Chemung Subbasin. The assessments for the Chemung subbasin in this report are taken from the 1988 Water Quality Assessment Report.

The database is a tool for storing and updating reach assessment information. Reach assessments are updated as new data becomes available. Data sources include SRBC stream surveys, federal and state agency surveys, environmental impact assessments and other miscellaneous sources. These sources account for 46% of the assessments included in this report (Table 3). Other assessments were evaluationed based on subjective factors such as topographic map data, reach classifications and the lack of contrary information.

TABLE 3

## DESIGNATED USE SUPPORT

Type of Waterbody: Streams/rivers

Degree of Use Support	Assessment Basis		Total Assessed
	Evaluated	Monitored	
Miles fully supporting	7,007.8	4804.6	11,812.4
Miles partially supporting	22.2	474.9	497.1
Miles not supporting	111.9	846.6	958.5
TOTAL	7,141.9	6,126.1	13,268.0

This database is similar to the EPA Waterbody System in principal but differs in practical aspects. Unfortunately, the the SRBC and EPA computer systems are currently incompatible, thus greatly hindering any direct exchange of data. The SRBC data for Pennsylvania streams has been transferred to the Pennsylvania Department of Environmental Resources database to be uploaded to WBS.

Water Quality Summary

There are 21,100 miles (+/- 100 miles) of named streams in the Susquehanna River Basin. This report covers 13,268.0 stream miles; the remaining streams are unassessed. Most assessed streams are in the Lower Susquehanna, Juniata and West Branch subbasins. Table 4 and Figure 2 show the distribution of stream miles among the six subbasins.

TABLE 4

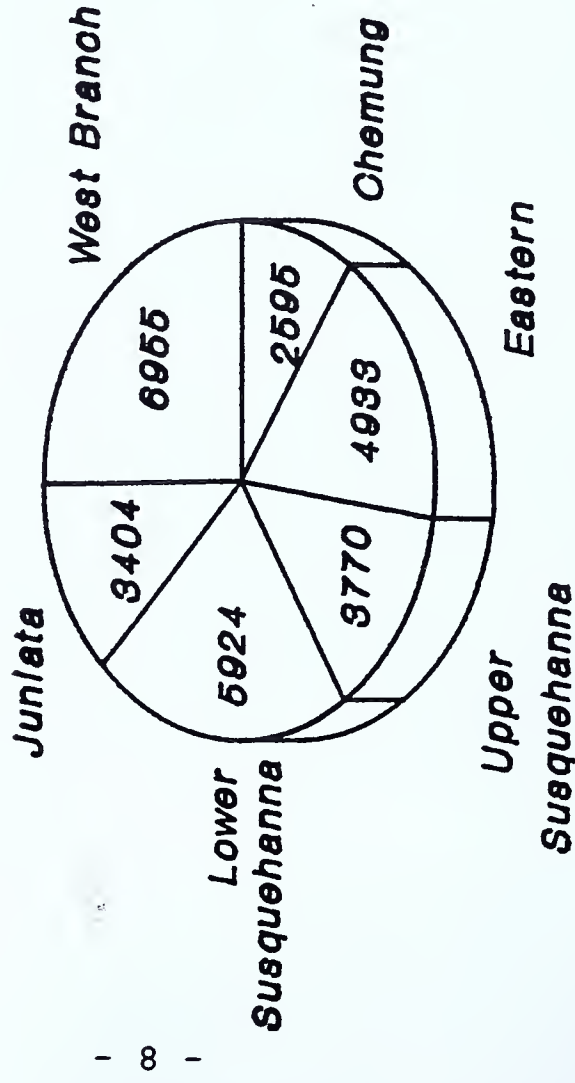
## SUBBASIN SUMMARY

SUBBASIN	MILES ATTAINED	MILES PART ATTAINED	MILES NOT ATTAINED	MILES ASSESSED
-----	-----	-----	-----	-----
EASTERN	805.7	59.2	5.4	870.3
CHEMUNG	374.2	45.0	43.8	463.0
UPPER SUSQUEHANNA	1105.1	79.4	153.5	1338.0
WEST BRANCH	4358.2	96.8	477.4	4932.4
JUNIATA	2170.9	33.9	43.2	2248.0
LOWER SUSQUEHANNA	2998.3	182.8	235.2	3416.3
-----	-----	-----	-----	-----
TOTAL	11,812.4	497.1	958.5	13,268.0

Reach specific data is given in the Appendix. Streams were placed in three categories for this report. Impaired streams have some degree of use impairment and are tabulated together. Major streams are unimpaired reaches greater than 10 miles in length and are also tabulated. Minor streams are unimpaired reaches less than 10 miles in length. This is the most numerous category and this data is summarized as a total.

Over 89% (11,812 miles) of the stream miles assessed meet designated uses (Table 4 and Figure 3). Figures 4 - 15 summarize water quality for the larger streams in the six subbasins. Reaches having some degree of impairment are shown in dotted lines, while solid lines represent full attainment of designated uses.

# Subbasin Areas (square miles)



# Stream Miles Assessed

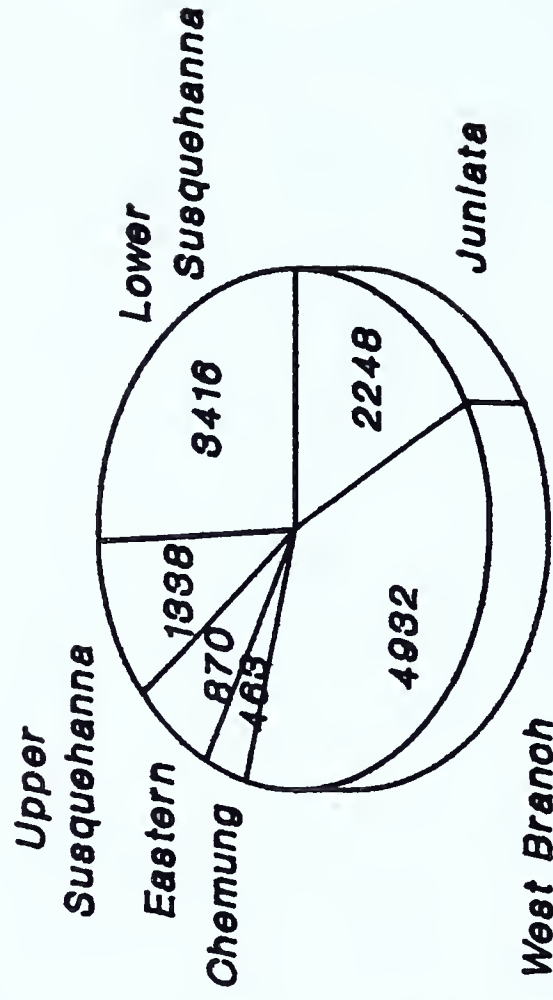
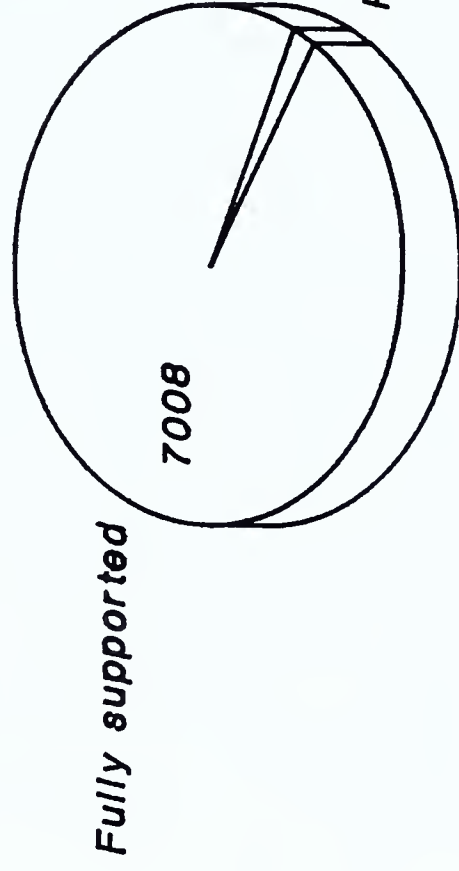


Figure 2 - Major Subbasin Areas and Stream Miles Assessed



*Evaluated  
(stream miles)*



*Monitored  
(stream miles)*

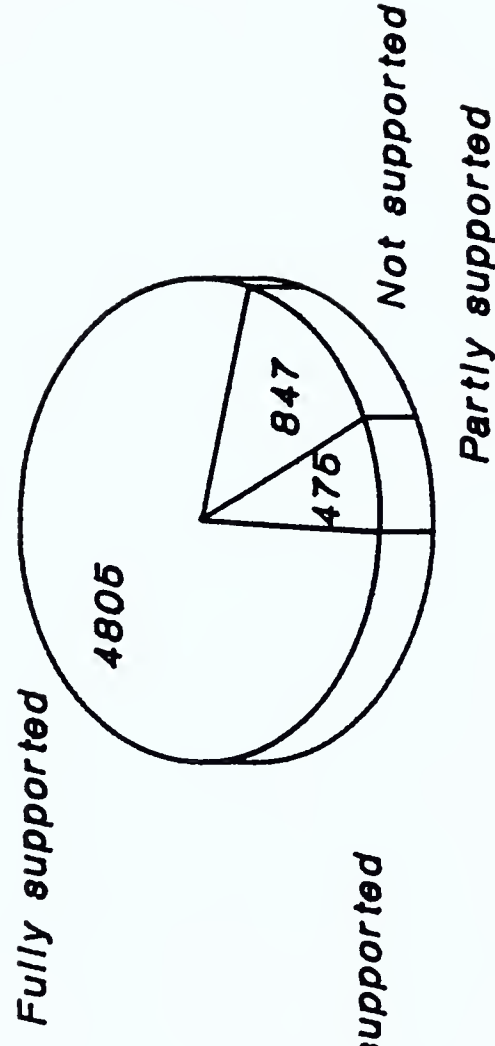


Figure 3 - Designated Use Support

*Stream miles*

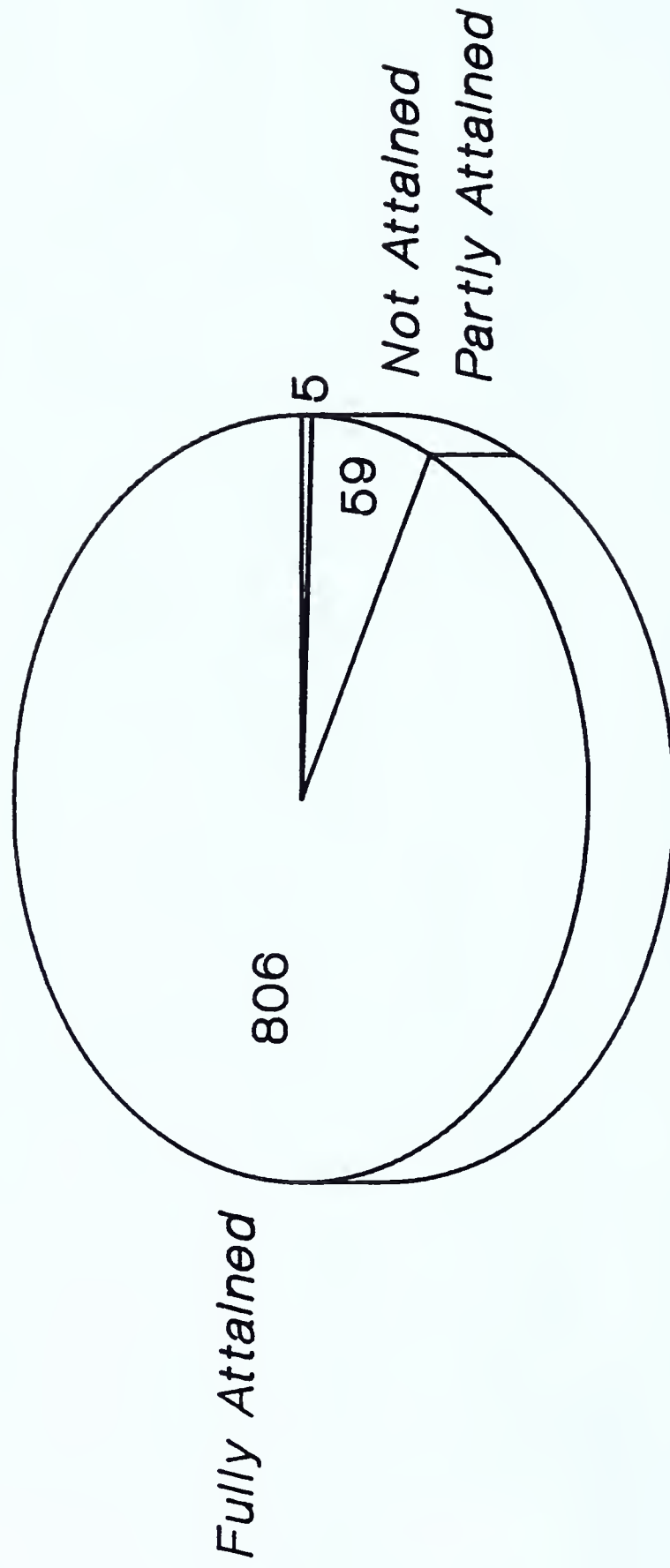
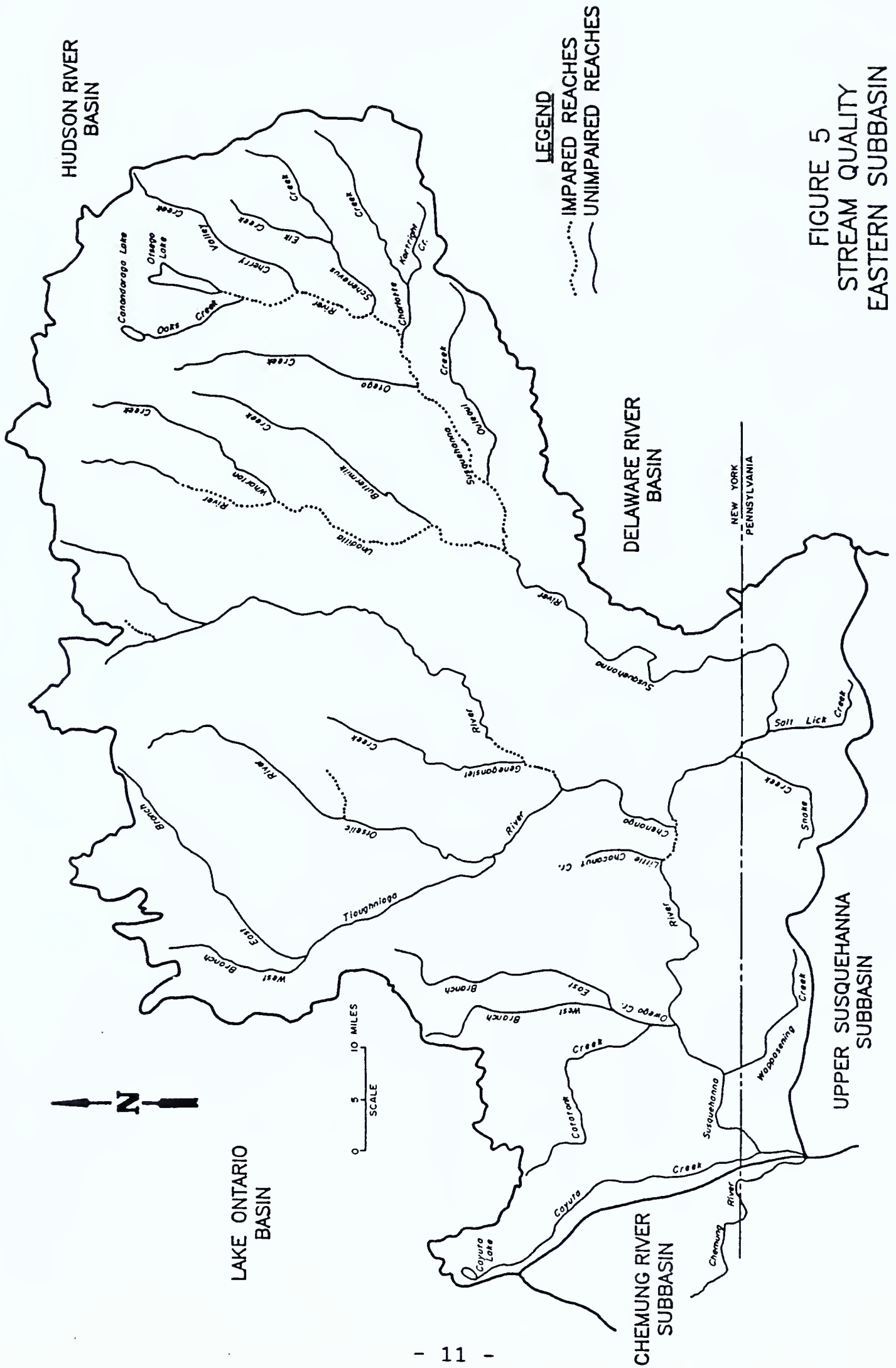


Figure 4 - Attainment of Designated Uses: Eastern Subbasin



*Stream miles*

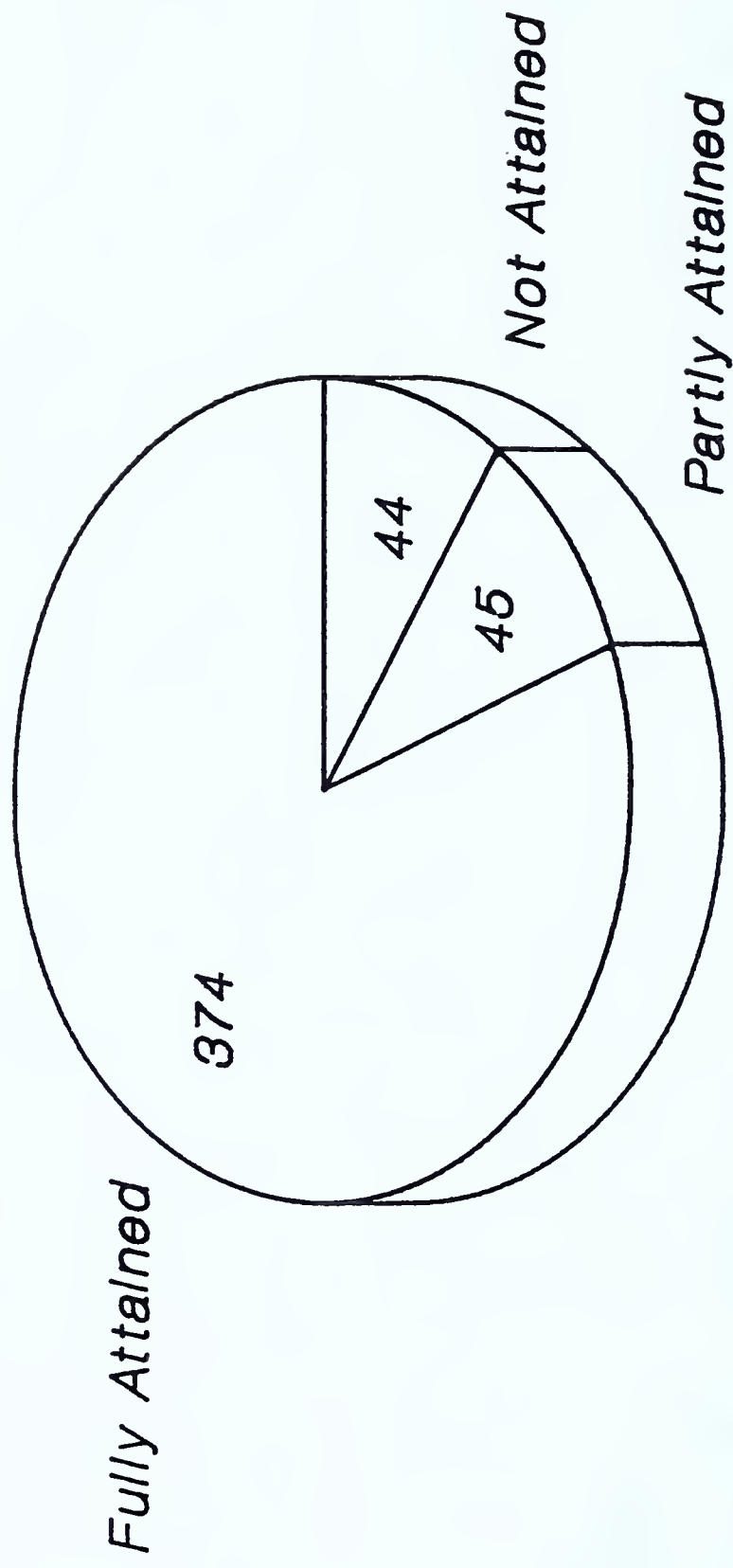


Figure 6 - Attainment of Designated Uses: Chemung Subbasin





*Stream miles*

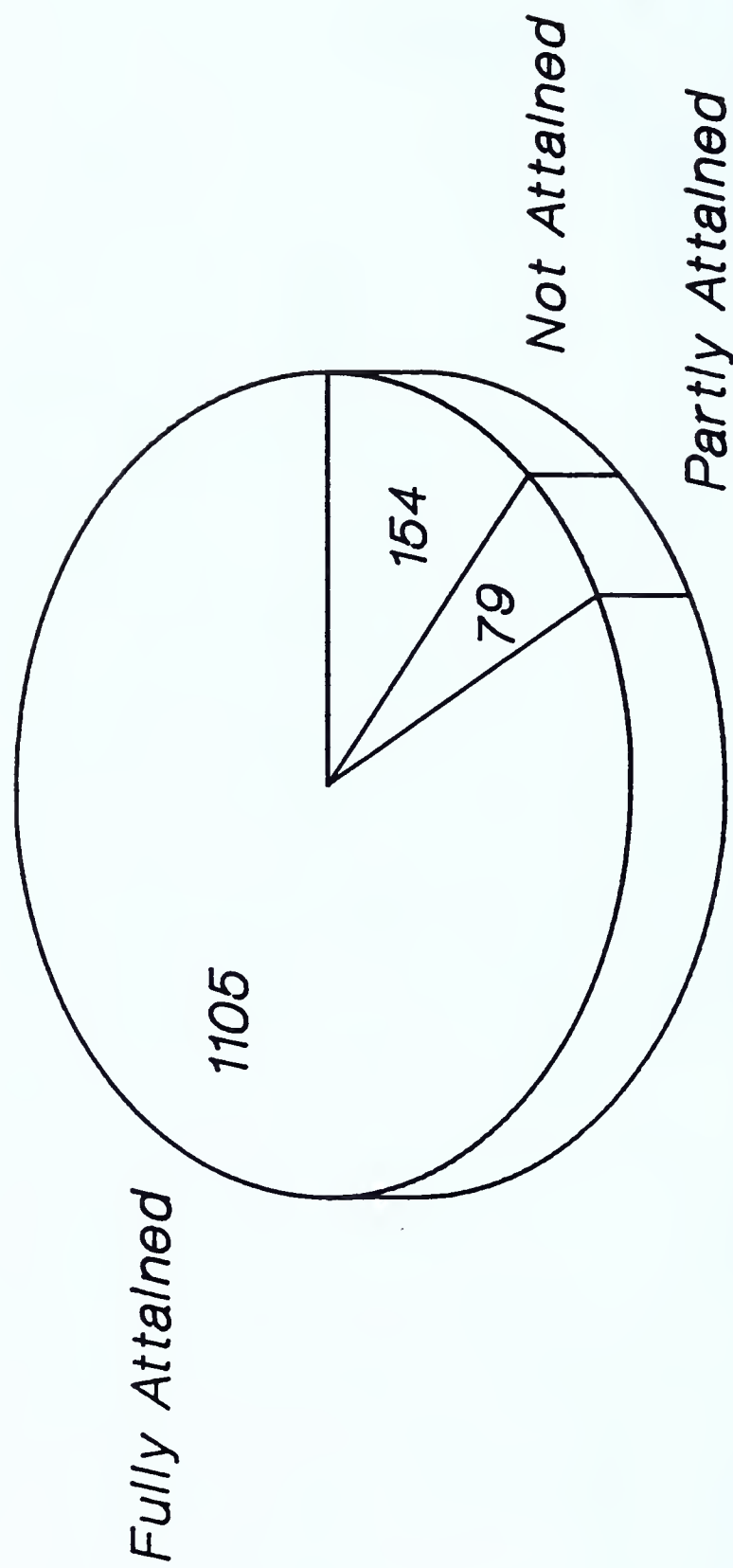


Figure 8 - Attainment of Designated Uses: Upper Susquehanna Subbasin



*Stream miles*

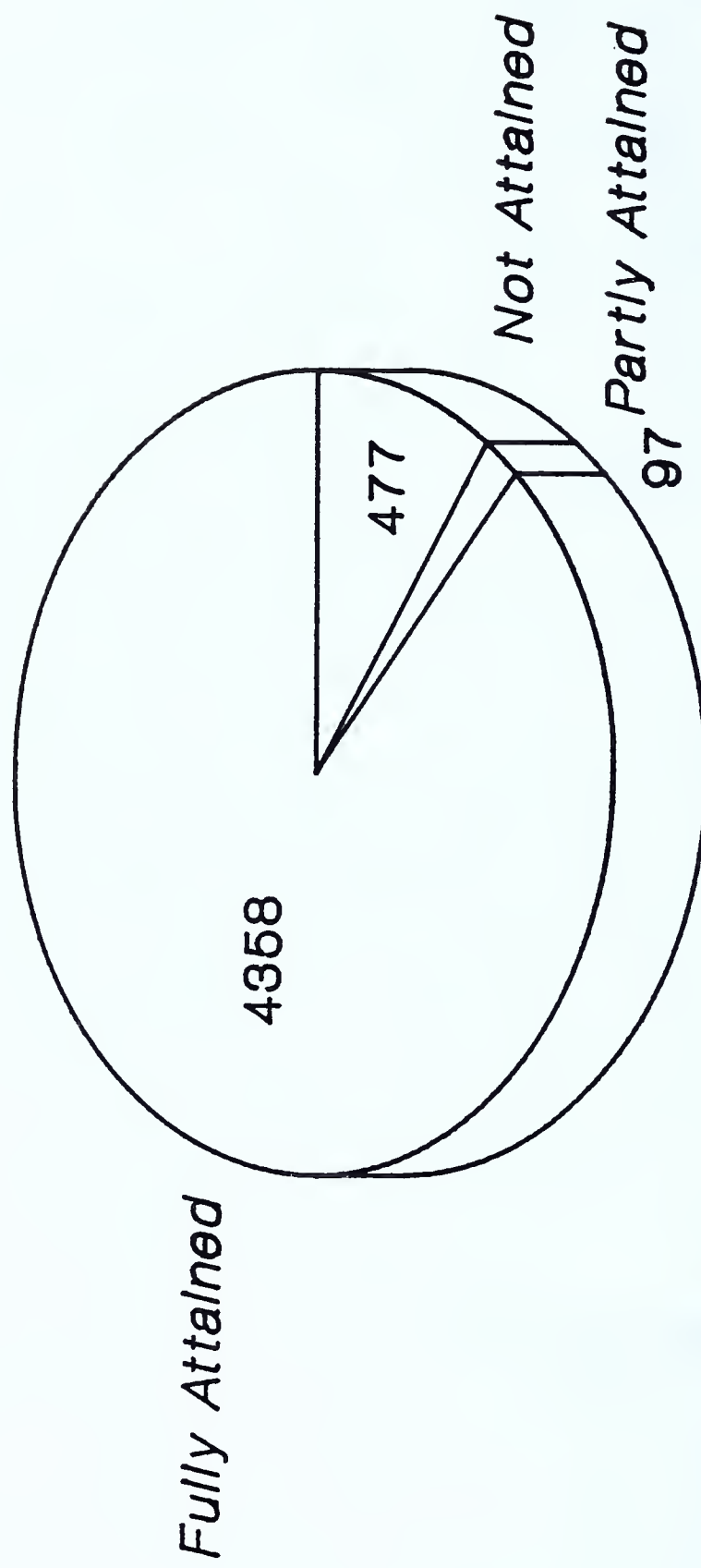
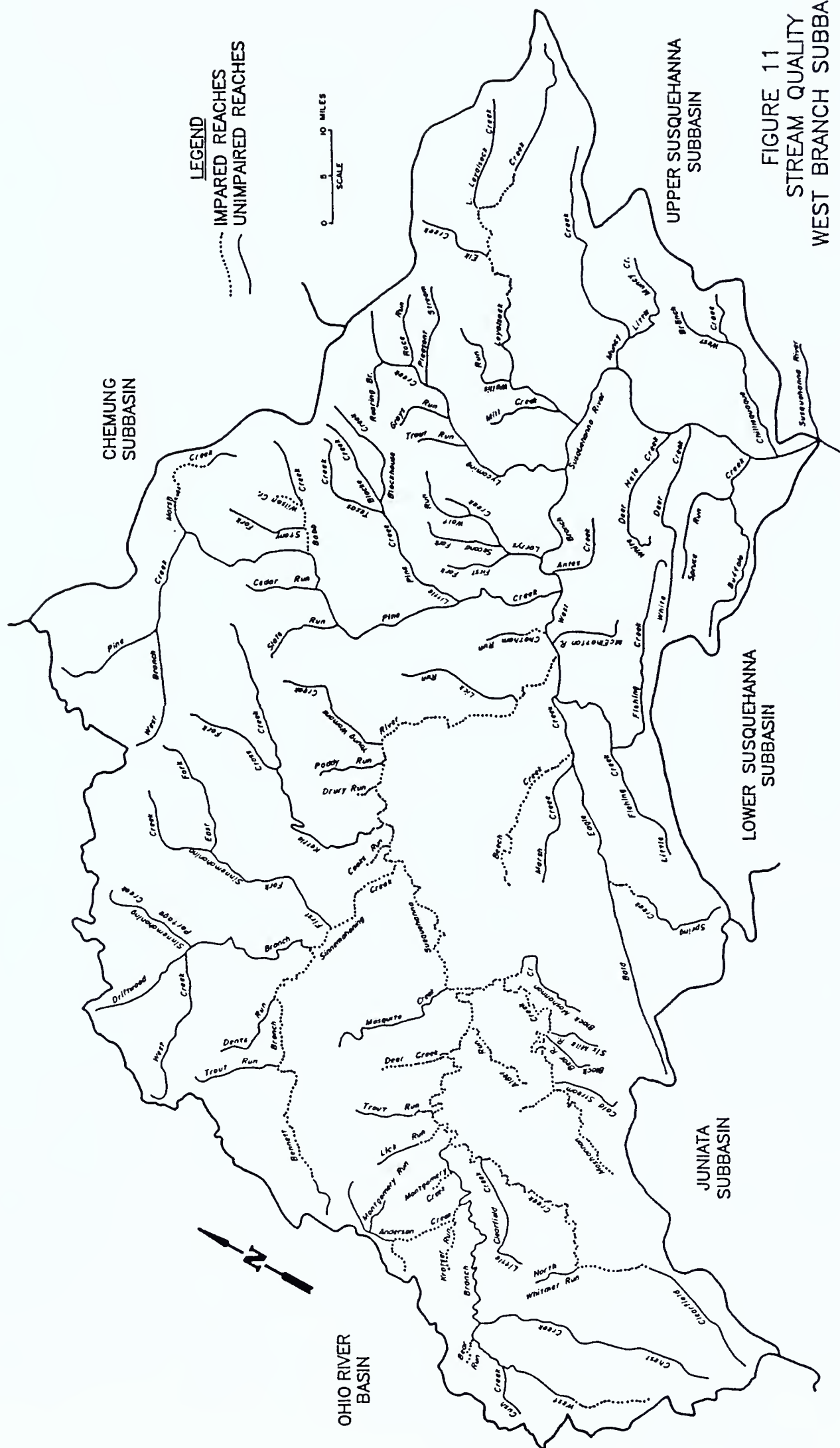


Figure 10 - Attainment of Designated Uses: West Branch Subbasin





*Stream miles*

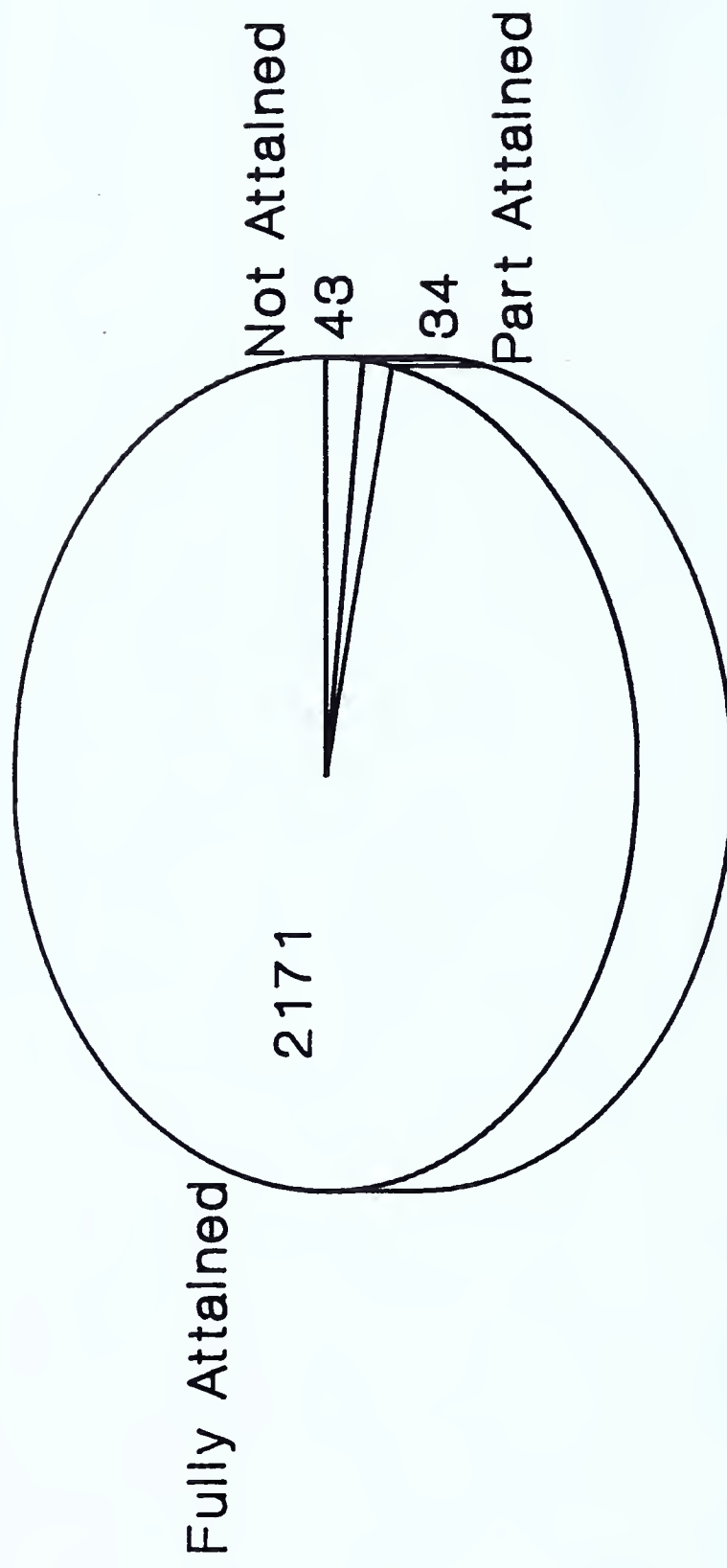


Figure 12 - Attainment of Designated Uses: Juniata Subbasin

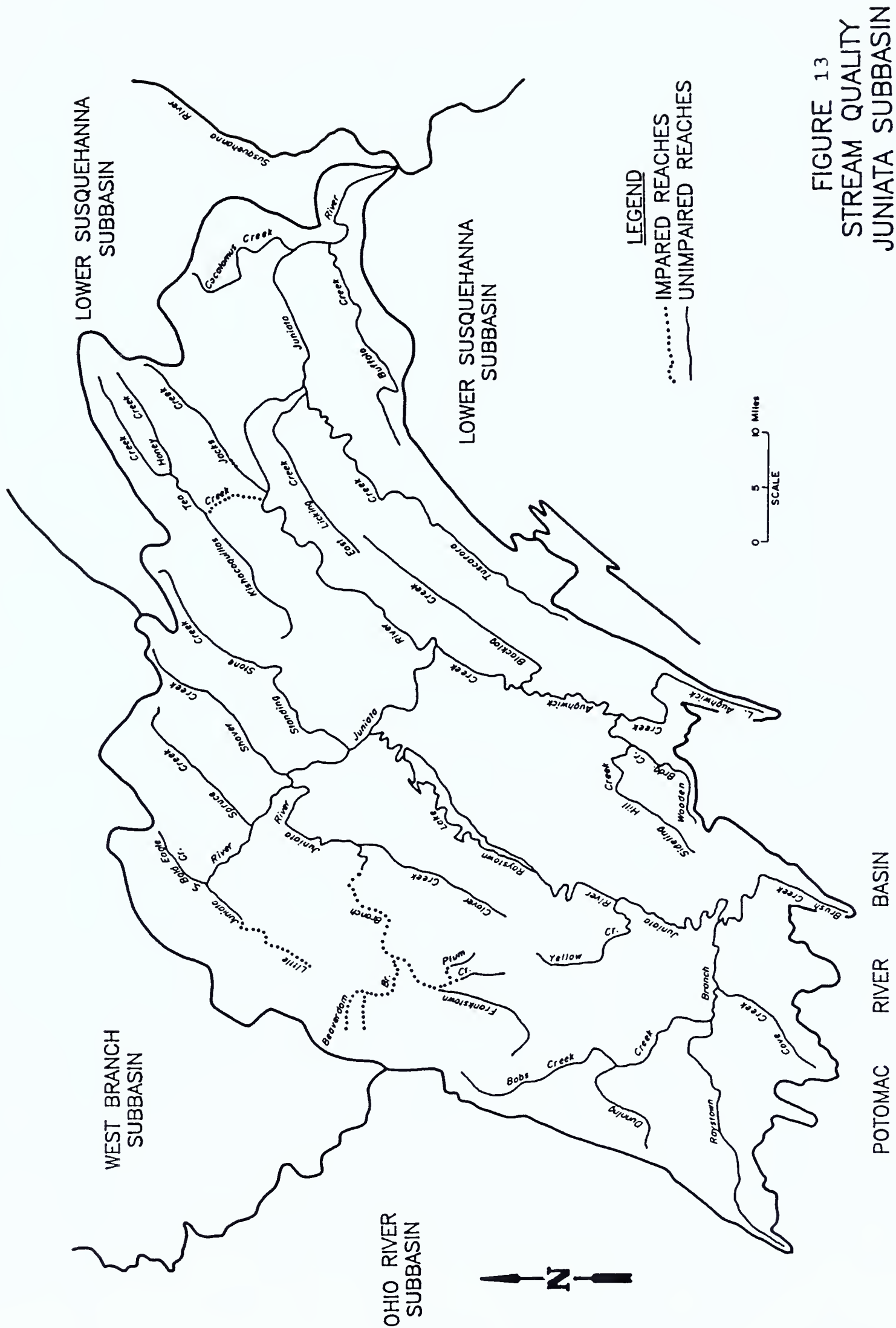


FIGURE 13  
STREAM QUALITY  
JUNIATA SUBBASIN

*Stream miles*

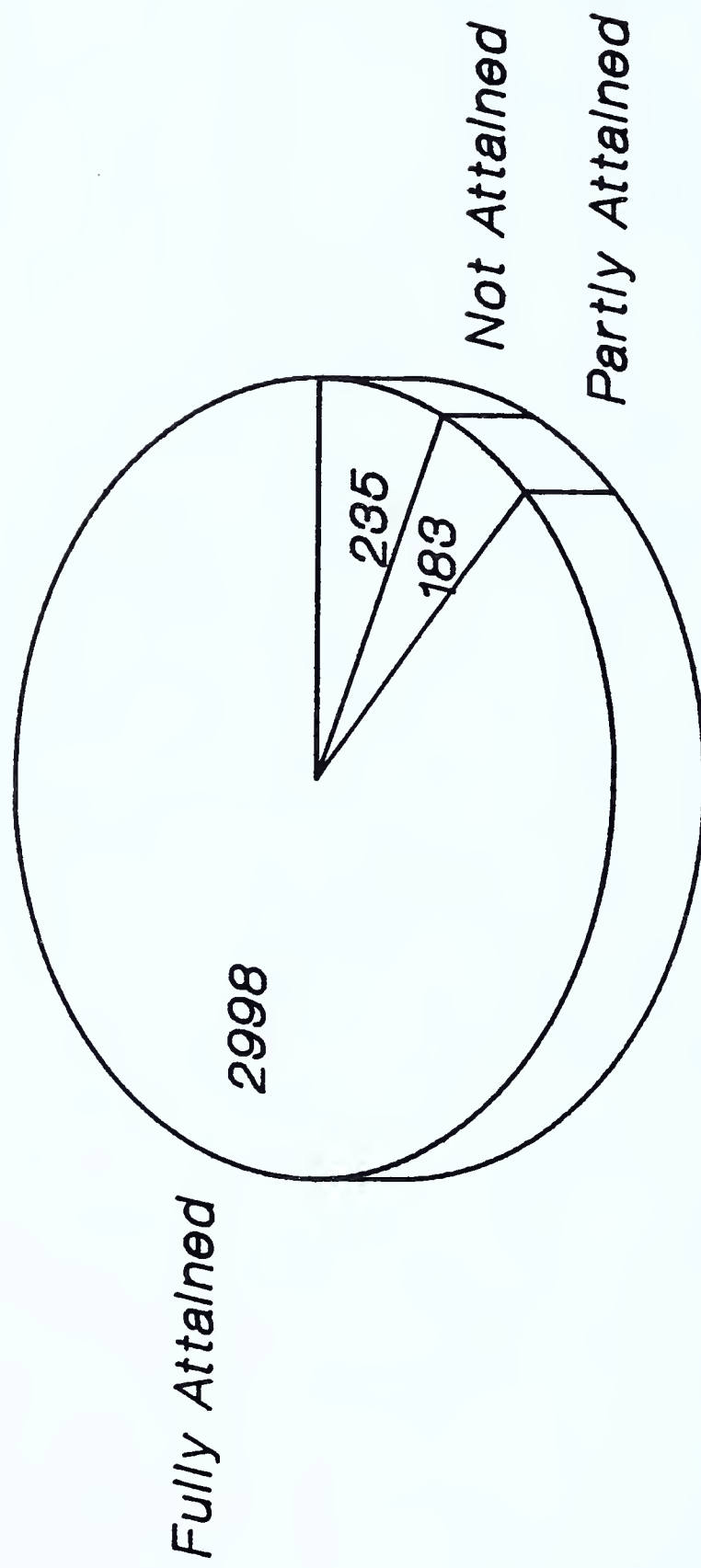


Figure 14 - Attainment of Designated Uses: Lower Susquehanna Subbasin

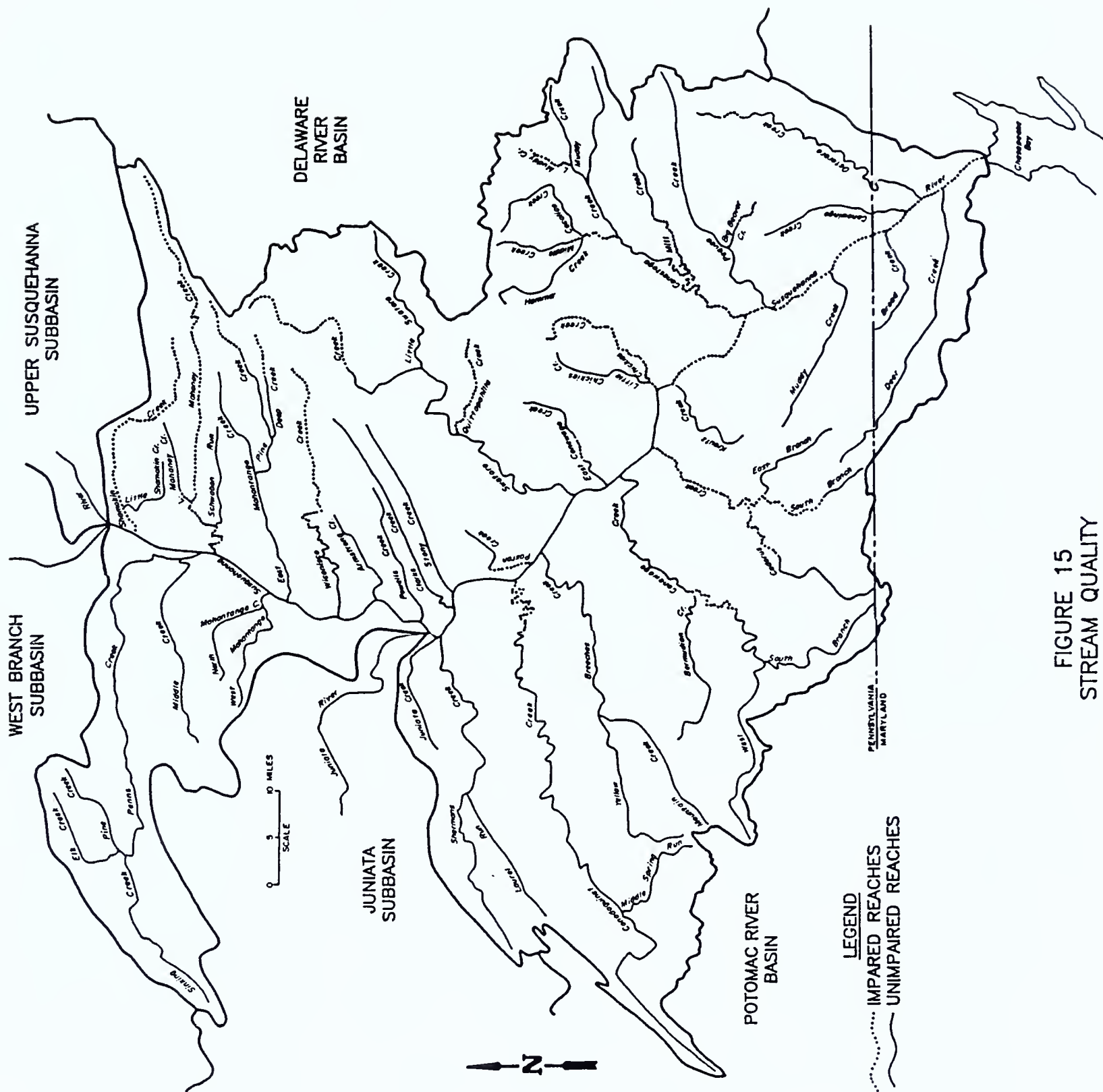


FIGURE 15  
STREAM QUALITY  
LOWER SUSQUEHANNA SUBBASIN

## Causes and Sources of Nonsupport of Designated Uses.

### Relative assessment of causes.

Metals are the greatest cause of use impairment in the Basin. Metals degrade 800 miles, or 58% of all impaired miles. Other major causes are pH (10%), nutrients (9%) and organic enrichment (8%). Other causes affecting water quality include toxics, pesticides, ammonia, chlorine, siltation, dissolved solids, thermal and flow modifications, and pathogenic indicators.

TABLE 5

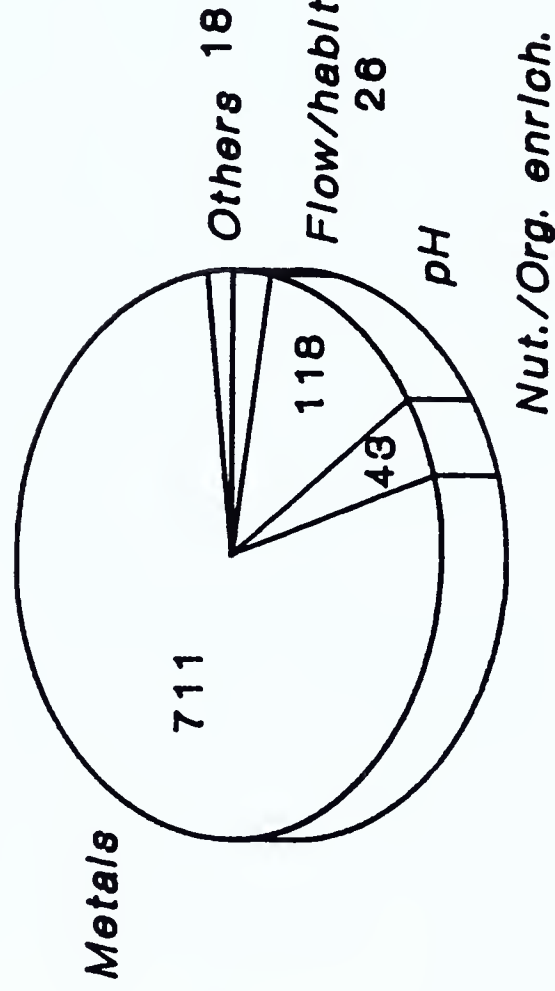
### TOTAL STREAM MILES NOT FULLY SUPPORTING USES AFFECTED BY VARIOUS CAUSE CATEGORIES

Type of Waterbody: Streams/ivers

CAUSE CATEGORIES	MAJOR IMPACT	MODERATE/MINOR IMPACT
Unknown	5.0	12.0
Unknown toxicity	2.5	2.5
Pesticides		21.5
Priority organics		
Nonpriority organics		
Metals	710.8	89.3
Ammonia		0.5
Chlorine		6.0
Other inorganics		
Nutrients	5.7	123.4
pH	117.5	17.3
Siltation	5.0	
Organic enrichment/DO	37.1	73.3
Salinity/TDS/chlorides	5.0	35.2
Thermal modification	0.1	
Flow alteration	26.0	
Other habitat alterations		22.9
Pathogen indicators		48.2
Radiation		
Oil and grease		
Taste and odor		
Suspended solids		
Noxious aquatic plants		
Filling and draining		
TOTALS	914.7	452.1



## Major impacts (915 miles)



## Minor impacts (452 miles)

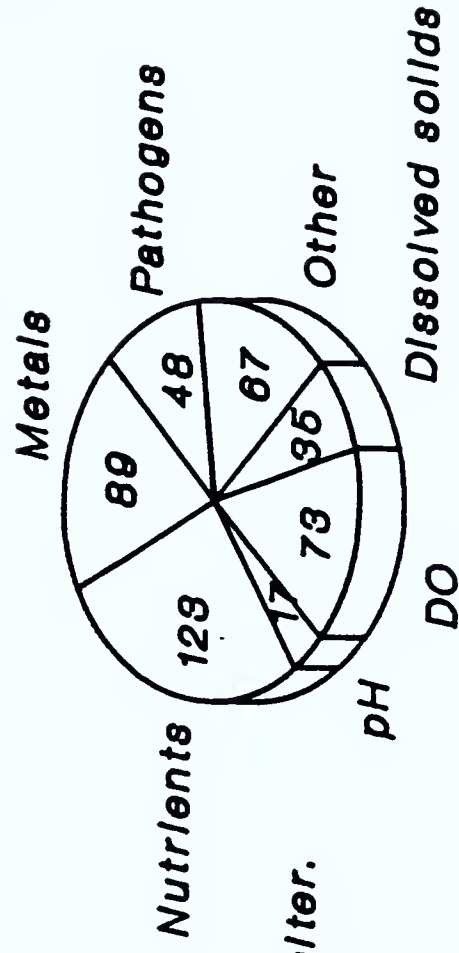


Figure 16 - Causes of Impaired Uses

## Relative assessment of sources

Resource extraction sources, primarily acid mine drainage, degrade 962 miles, or 70% of all degraded reaches assessed. Other major sources are municipal waste water discharges (9%), agricultural runoff (9%) and industrial waste discharges (6%). Other sources affecting water quality are domestic waste discharges, acid precipitation, urban runoff, and hydroelectric projects.

TABLE 6

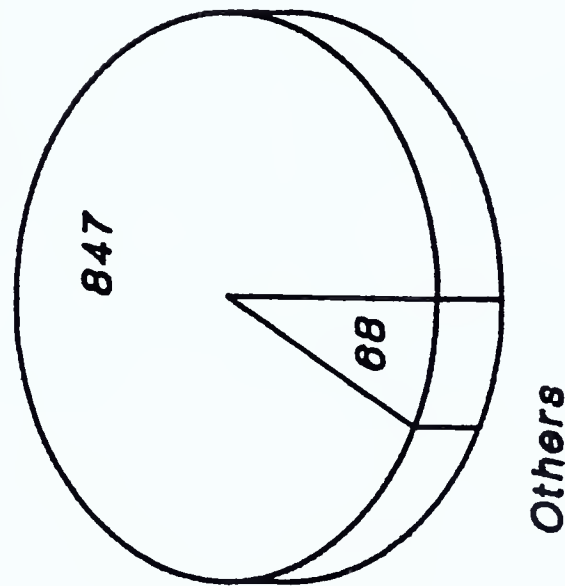
### TOTAL STREAM MILES NOT FULLY SUPPORTING USES AFFECTED BY VARIOUS SOURCE CATEGORIES

Type of Waterbody: Streams/rivers

SOURCE CATEGORIES	MAJOR IMPACT	MODERATE/MINOR IMPACT
Point sources		
Industrial	18.6	58.1
Municipal	39.1	81.3
Domestic		32.6
Storm sewers		
Other dischargers		
Nonpoint sources		
Acid deposition		5.0
Agriculture	6.0	110.4
Silviculture		
Construction		
Urban runoff	2.9	24.9
Resource extraction	847.1	114.4
Land disposal		
Hydro/habitat modification		22.0
Other NPS		
Unknown	1.0	3.4
TOTALS	914.7	452.1

# Major Impacts (915 miles)

*Resource extraction*



# Minor Impacts (452 miles)

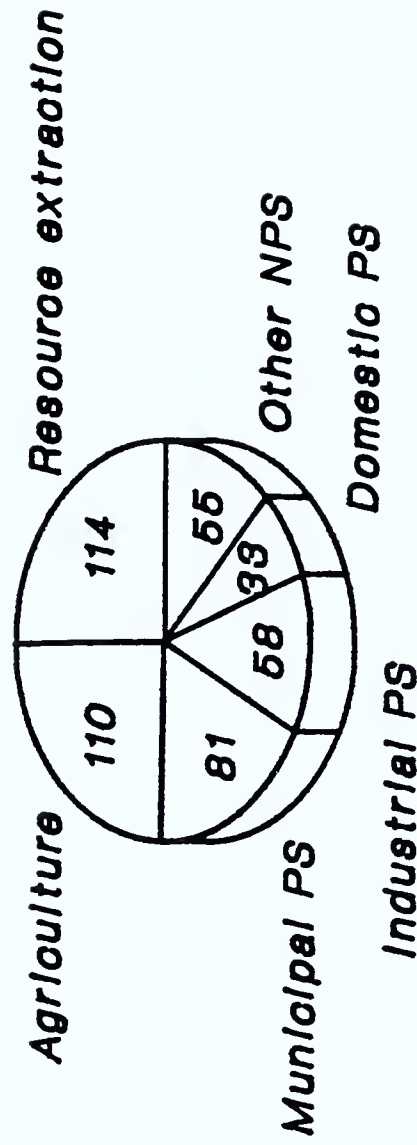


Figure 17 - Sources of Impaired Uses

## Chapter 2: Public Health/Aquatic Life Concerns

### Size of Water Bodies Affected by Toxics

TABLE 7

#### TOTAL SIZE AFFECTED BY TOXICS

WATER BODY -----	SIZE MONITORED FOR TOXICS -----	SIZE WITH ELEVATED LEVELS OF TOXICS -----
Rivers (miles)	1,195.9	884.6
Lakes (acres)	No data	No data

SRBC has no programs directed specifically at toxic substances. Several studies have been or are being planned in cooperation with PaDER that are directed at the control of toxics from permitted discharges. These are done on a contract basis and funded by DER's 205(j) grant. The assessment summaries given in the appendix include some information on toxics. Reaches determined to be impacted by toxics are flagged.

### Public Health/Aquatic Life Impacts

No available information.

### Section 304(1) Waters

No information.

## Chapter 3: Lake Quality Assessment

At this writing, SRBC has not conducted any assessment work on lakes or reservoirs in the Basin.

#### Chapter 4: Estuary and Coastal Information

Not applicable.

#### Chapter 5: Wetlands Information

At this writing, SRBC has not conducted any assessment work on wetlands in the Basin.



## PART IV: WATER POLLUTION CONTROL PROGRAM

### Introduction

The Susquehanna River Basin Compact provides that the states shall have the primary responsibility for water quality management and control. Therefore, SRBC provides a regional role and attempts to coordinate local, state and federal water quality management efforts; promote uniform enforcement of and compliance with established standards and classifications; and encourage amendment and modification of standards and classifications within the Basin as deemed in the public interest.

### Chapter 1: Point Source Control Program

SRBC reviews proposed discharge permits and provides comments to permitting agencies on matters within SRBC jurisdiction. Reviews are oriented towards evaluating potential interstate or regional impacts.

### Chapter 2: Nonpoint Source Control Program

Same as point source control reviews.

### Chapter 3: Cost/Benefit Assessment

Not performed.

### Chapter 4: Surface Water Monitoring Program

SRBC has conducted a number of water quality assessment surveys during this reporting cycle.

- **Interstate Water Quality Monitoring Network.** A monitoring program of interstate streams has been in place since 1986. This program is designed to assess the quality of interstate streams and monitor compliance with water quality standards. Water samples were collected quarterly and biological assessments were done annually. Annual monitoring reports are published by SRBC; Publication #122 is most recent.

- **Lackawanna River Toxics Survey.** A time-series survey of toxic metals and other compounds was done on the Lackawanna River in October 1988. This project was funded by DER's 205(j) grant and the data was used by DER in their effluent permit process.

- **Assessment of Nutrient Sources from Main Stem and Selected Watersheds.** This program, started in 1984, has investigated the quantity of nutrient loads carried into the Chesapeake Bay from the Susquehanna River and certain subwatersheds. Of interest is the separation of loads for storm flows versus base flow conditions. Pending future funding this program ended in December 1989.

- **Conodoguinet Creek/Yellow Breeches Creek Water Supply Study.** A subprogram of this study was the assessment of water quality and biological conditions in these streams. Time-series sampling was conducted for nutrients in August 1989. Macroinvertebrate and fish sampling was also done. A study to estimate the minimum flows required for optimum aquatic life was also started.

## Chapter 5: Special Concerns and Recommendations

Special concerns relative to water quality focus on two problems: acid mine drainage and the Chesapeake Bay. Degradation of streams due to acid mine drainage is the most widespread water quality problem in the Basin. Remedial action of this problem is being pursued by state and federal agencies, but progress is slow. This is due to great cost involved and the widespread nature of the problem. Successful abatement projects have been implemented in small areas, but the scope of the problem is so large that it will take many years before some streams will meet designated uses.

The other problem, impacts in the Chesapeake Bay, has received more attention recently and is the subject of many programs and policies. The work conducted to improve the Bay will also produce water quality benefits in the Basin. SRBC continues to be actively involved in these programs.

SRBC's water quality assessment program includes several future goals: 1) completion of stream reach database to include Upper Susquehanna, Chemung and Eastern subbasins, 2) interface with WBS, 3) conduct inventories of lakes and wetlands, and 4) verification of impaired use assessments.

## APPENDIX



## ABBREVIATIONS USED IN TABLES A-7 THROUGH A-18

### STREAM CLASSIFICATIONS (Best usages)

New York A - Source of water supply for drinking, culinary or food processing purposes and uses under B and C.

B - Primary contact recreation and uses under C.

C - Fishing and fish propagation.

D - Fishing.

Pennsylvania CWF - Cold Water Fishes.

TSF - Trout Stocking Fishes.

WWF - Warm Water Fishes.

HQ-CWF - High Quality Cold Water Fishes.

HQ-TSF - High Quality Trout Stocking Fishes.

HQ-WWF - High Quality Warm Water Fishes.

EV - Exceptional Value Waters.

Maryland I - Water Contact Recreation and Aquatic Life.

II - Shellfish Harvesting Waters (not applicable to basin).

III - Natural Trout Waters.

IV - Recreational Trout Waters.

### SOURCE CODES

MW - Municipal wastes.

IW - Industrial wastes.

DW - Domestic wastes.

OPS - Other point sources.

AMD - Acid mine drainage.

AP - Acid precipitation.

AGR - Agriculture.

URBRO - Urban runoff.

ONS - Other nonpoint sources.

UNK - Unknown.



# SUBBASIN SUMMARIES

TABLE A-1  
EASTERN SUBBASIN

REACH CATEGORY	MILES ATTAINED	MILES PART ATTAINED	MILES NOT ATTAINED	MILES ASSESSED
IMPAIRED	79.7	59.2	5.4	144.3
MAJOR (length > 10 miles)	481.1	0.0	0.0	481.1
MINOR (length < 10 miles)	244.9	0.0	0.0	244.9
TOTAL	805.7	59.2	5.4	870.3

TABLE A-2  
CHEMUNG SUBBASIN

REACH CATEGORY	MILES ATTAINED	MILES PART ATTAINED	MILES NOT ATTAINED	MILES ASSESSED
IMPAIRED	64.8	45.0	43.8	153.6
MAJOR (length > 10 miles)	222.1	0.0	0.0	222.1
MINOR (length < 10 miles)	87.3	0.0	0.0	87.3
TOTAL	374.2	45.0	43.8	463.0

TABLE A-3  
UPPER SUSQUEHANNA SUBBASIN

REACH CATEGORY	MILES ATTAINED	MILES PART ATTAINED	MILES NOT ATTAINED	MILES ASSESSED
IMPAIRED	147.8	79.4	153.5	380.7
MAJOR (length > 10 miles)	604.6	0.0	0.0	604.6
MINOR (length < 10 miles)	352.7	0.0	0.0	352.7
TOTAL	1105.1	79.4	153.5	1338.0

TABLE A-4  
WEST BRANCH SUBBASIN

REACH CATEGORY	MILES ATTAINED	MILES PART ATTAINED	MILES NOT ATTAINED	MILES ASSESSED
-----	-----	-----	-----	-----
IMPAIRED	182.3	96.8	477.4	756.5
MAJOR (length > 10 miles)	766.6	0.0	0.0	766.6
MINOR (length < 10 miles)	3409.3	0.0	0.0	3409.3
-----	-----	-----	-----	-----
TOTAL	4358.2	96.8	477.7	4932.4

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TABLE A-5  
JUNIATA SUBBASIN

REACH CATEGORY	MILES ATTAINED	MILES PART ATTAINED	MILES NOT ATTAINED	MILES ASSESSED
-----	-----	-----	-----	-----
IMPAIRED	88.4	33.9	43.2	165.5
MAJOR (length > 10 miles)	810.0	0.0	0.0	810.0
MINOR (length < 10 miles)	1272.5	0.0	0.0	1272.5
-----	-----	-----	-----	-----
TOTAL	2170.9	33.9	43.2	2248.0

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TABLE A-6  
LOWER SUSQUEHANNA SUBBASIN

REACH CATEGORY	MILES ATTAINED	MILES PART ATTAINED	MILES NOT ATTAINED	MILES ASSESSED
-----	-----	-----	-----	-----
IMPAIRED	355.3	182.8	235.2	773.3
MAJOR (length > 10 miles)	1094.5	0.0	0.0	1094.5
MINOR (length < 10 miles)	1548.5	0.0	0.0	1548.5
-----	-----	-----	-----	-----
TOTAL	2998.3	182.8	235.2	3416.3

TABLE A-7

## IMPAIRED REACHES IN THE EASTERN SUBBASIN

STREAM	REACH	CLASS	ATTAINED	PART	NOT	ASSESSED	TOXIC?	SOURCE
Brakel Creek	Source to Cortland County line	D	7.3	-	1.1	8.4	-	MW
Brakel Creek	Chenango County line to Otselic River	D	-	-	1.9	1.9	-	MW
Chenango River	Fly Creek to Norwich line	B	-	4.6	-	4.6	-	MW
Chenango River	Tributary #41 to Broome County line	B	4.5	15.0	-	19.5	-	MW
Little Choconut Creek	Source to Susquehanna River	D	9.0	-	0.1	9.1	-	IW
Payne Brook	Hamilton to Chenango River	D	-	-	2.3	2.3	-	MW
Susquehanna River	Rock Bottom Dam to Tioga County line	C	11.0	3.0	-	14.0	-	MW
Susquehanna River	Otsego Lake to Chenango County line	B	37.1	8.0	-	45.1	-	MW
Unadilla River	Madison County line to Susquehanna River	B	10.8	28.6	-	39.4	-	DW
	TOTAL		79.7	59.2	5.4	144.3		

TABLE A-8

## IMPAIRED REACHES IN THE CHEMUNG SUBBASIN

STREAM	REACH	CLASS	ATTAINED	PART	NOT	ASSESSED	TOXIC?	SOURCE
Canacadea Creek	Almond Reservoir to Canistota River	D	-	3.2	-	3.2	-	OPS
Canistota River	Seneca Street to 1 mile downstream Hornell	D	-	3.3	-	3.3	-	MW
Canistota River	1 mile downstream Hornell to Tioga River	C	28.8	9.0	-	37.8	-	MW
Chemung River	Hoffman Creek to Bentley Creek	C	-	8.0	-	8.0	-	MW
Chemung River	Bentley Creek to Pennsylvania State line	A	-	7.3	-	7.3	-	MW
Coal Creek	Source to Tioga River	CWF	-	-	2.5	2.5	T	AMD
Cowanesque River	North Fork to Cowanesque Lake	WWF	24.4	-	6.0	30.4	-	MW
Fellows Creek	Source to Tioga River	CWF	-	5.7	-	5.7	-	AP
Johnson Creek	Source to Tioga River	CWF	-	3.4	-	3.4	-	AMD
Morris Run	Source to Tioga River	CWF	-	-	2.4	2.4	T	AMD
Newtown Creek	Diven Creek to Chemung River	D	-	-	2.8	2.8	-	MW
Tioga River	Source to Crooked Creek	CWF	11.6	-	30.1	41.7	T	AMD
Tioga River	Crooked Creek to New York State line	WWF	-	5.1	-	5.1	-	AMD
	TOTAL		64.8	45.0	43.8	153.6		

TABLE A-9

## IMPAIRED REACHES IN THE UPPER SUSQUEHANNA SUBBASIN

STREAM	REACH	CLASS	ATTAINED	PART	NOT	ASSESSED	TOXIC?	SOURCE
-----	-----	-----	-----	-----	-----	-----	-----	-----
Ackerly Creek	South Branch to South Branch Tunkhannon Creek	TSF	4.0	4.7	-	8.7	-	MW
Black Creek	Source to Nescospeck Creek	CWF	-	-	23.5	23.5	T	AMD
Catawissa Creek	Source to Luzerne County line	CWF	-	-	0.7	0.7	T	AMD
Catawissa Creek	Schuylkill County line to Schuylkill County line	CWF	-	-	3.2	3.2	T	AMD
Catawissa Creek	Luzerne County line to Rattling Run	CWF	-	-	11.3	11.3	T	AMD
Catawissa Creek	Rattling Run to Columbia County line	TSF	-	-	6.7	6.7	T	AMD
Catawissa Creek	Schuylkill County line to Susquehanna River	TSF	-	-	20.5	20.5	T	AMD
Coal Brook	Source to Lackawanna River	CWF	0.3	-	1.9	2.2	T	AMD
Eddy Creek	UNT 63873 to Lackawanna River	WWE	4.0	-	3.0	7.0	-	UNK
Fall Brook	UNT 28590 to Lackawanna River	CWF	6.0	-	1.1	7.1	-	UNK
Grassy Island Creek	Elevation 1100 to Lackawanna River	CWF	-	-	1.3	1.3	-	UNK
Keyser Creek	Source to Lackawanna River	CWF	1.5	-	4.8	6.3	-	UNK
Lackawanna River	Wayne County line to Susquehanna River	WWE	-	22.6	2.6	25.2	T	AMD, URBRO
Little Nescospeck Creek	Source to Nescospeck Creek	CWF	-	-	9.1	9.1	T	AMD
Lucky Run	Source to Keyser Creek	CWF	1.9	-	0.9	2.8	-	UNK
Meadow Brook	Source to Lackawanna River	CWF	-	-	2.1	2.1	-	UNK
Mill Creek	Source to Susquehanna River	CWF	13.7	0.5	-	14.2	-	URBRO
Mill Creek	Source to Lackawanna River	CWF	2.7	-	4.1	6.8	-	UNK
Nanticoke Creek	Source to Susquehanna River	CWF	1.4	-	3.6	5.0	T	AMD
Nescospeck Creek	PA 309 to Susquehanna River	TSF	12.2	-	13.5	25.7	T	AMD
Newport Creek	Source to Susquehanna River	CWF	-	-	4.8	4.8	T	AMD
Pettis Creek	Source to Wyalusing Creek	WWE	3.1	0.5	-	3.6	-	MW
Powderly Creek	Source to Lackawanna River	CWF	-	-	1.9	1.9	T	AMD
Red Spring Run	Lackawanna County line to Lackawanna River	CWF	-	-	0.6	0.6	-	UNK
Schrader Creek	Sullivan County line to Towanda Creek	HQ-CWF	8.2	4.0	8.5	20.7	T	AMD
Solomon Creek	Source to Susquehanna River	CWF	4.2	3.3	1.5	9.0	T	AMD
South Branch Wyalusing Creek	Source to East Branch Wyalusing Creek	WWE	-	9.0	-	9.0	-	AGR

TABLE A-9 (continued)

## IMPAIRED REACHES IN THE UPPER SUSQUEHANNA SUBBASIN

STREAM	REACH	CLASS	ATTAINED	PART	NOT	ASSESSED	TOXIC?	SOURCE
St Johns Creek	UNT 28381 to Lackawanna River	CWF	1.2	-	4.8	6.0	-	UNK
Stafford Meadow Brook	Moosic/Scranton line to Lackawanna River	WWF	-	2.4	-	2.4	-	URBRO
Sterry Creek	Source to Lackawanna River	CWF	1.4	-	2.4	3.8	-	UNK
Sugar Run Creek	Source to Sugar Run	CWF	9.0	0.5	-	9.5	-	IW
Susquehanna River	Chemung River to Wyoming County line	WWF	39.3	0.5	-	39.8	-	IW
Susquehanna River	Lackawanna River to Columbia County line	WWF	8.5	26.0	2.0	36.5	T	AMD
Toby Creek	Source to Susquehanna River	CWF	9.1	1.4	1.0	11.5	-	UNK
Tomhickon Creek	Source to Schuylkill County line	CWF	-	-	4.3	4.3	T	AMD
Tomhickon Creek	Luzerne County line to Catawissa Creek	CWF	-	-	6.3	6.3	T	AMD
Wildcat Creek	Source to Lackawanna River	CWF	2.4	-	0.9	3.3	-	UNK
Wilson Creek	Source to Lackawanna River	CWF	3.0	-	0.6	3.6	T	AMD
Wyalusing Creek	Susquehanna County line to Susquehanna River	WWF	10.7	4.0	-	14.7	-	DW
		TOTAL	147.8	79.4	153.5	380.7		

TABLE A-10

## IMPAIRED REACHES IN THE WEST BRANCH SUBBASIN

STREAM	REACH	CLASS	ATTAINED	PART	NOT	ASSESSED	TOXIC?	SOURCE
Alder Run	UNT 64554 to West Branch	CWF	-	-	10.7	10.7	T	AMD
Amos Branch	UNT 25546 to Birch Island Run	HQ-CWF	-	-	1.6	1.6	T	AMD
Anderson Creek	Dubois Reservoir to West Branch	CWF	4.5	-	10.3	14.8	T	AMD
Babb Creek	Source to Pine Creek	CWF	7.5	-	14.0	21.5	T	AMD
Bear Run	Indiana County line to West Branch	CWF	-	-	2.9	2.9	T	AMD
Beech Creek	North/South Forks Beech Creek to Bald Eagle Creek	CWF	-	-	21.7	21.7	T	AMD
Beech Creek	Big Run to Bald Eagle Creek	CWF	-	-	5.6	5.6	T	AMD



TABLE A-10 (continued)

## IMPAIRED REACHES IN THE WEST BRANCH SUBBASIN

STREAM	REACH	CLASS	ATTAINED	PART	NOT	ASSESSED	TOXIC?	SOURCE
-----	-----	-----	-----	-----	-----	-----	-----	-----
Bennett Branch	McCracken Run to Elk County line	WWE	6.4	-	4.8	11.2	T	AMD
Sinnemahoning Creek								
Bennett Branch	Clearfield County line to Cameron County line	WWE	-	-	24.0	24.0	T	AMD
Sinnemahoning Creek								
Bennett Branch	Cameron County line to Sinnemahoning Creek	WWE	-	-	8.8	8.8	T	AMD
Sinnemahoning Creek								
Birch Island Run	UNT 25548 to West Branch Susquehanna River	HQ-CWF	-	-	6.2	6.2	T	AMD
Black Moshannon Creek	Shirks Run to Moshannon Creek	HQ-CWF	18.6	1.0	-	19.6	-	AMD
Buckeye Run	Jack Cammalls Camp Run to Otter Run	CWF	-	0.9	-	0.9	-	AMD
Chatham Run	Chatham Water Co. Res. #2 to West Branch	CWF	2.1	2.0	-	4.1	-	UNK
Cherry Run								
Clearfield Creek	Source to North Fork Beech Creek	CWF	-	-	0.9	0.9	T	AMD
Clearfield Creek	UNT 26605 to Clearfield County line	WWE	-	27.7	-	27.7	-	AMD
Cold Stream	Cambria County line to West Branch	WWE	-	-	44.2	44.2	T	AMD
Cooks Run	US 322 to Moshannon Creek	CWF	-	-	1.0	1.0	T	AMD
Curleys Run	Cameron County line to West Branch	HQ-CWF	7.1	-	3.3	10.4	T	AMD
Deer Creek	Source to Mosquito Creek	HQ-CWF	-	-	1.2	1.2	T	AMD
Drury Run	UNT 26008 to West Branch	CWF	4.0	-	5.0	9.0	T	AMD
Kettle Creek	Bark Shanty Hollow to West Branch	HQ-CWF	3.5	-	3.0	6.5	T	AMD
Kratzer Run	Potter County line to West Branch	HQ-TSF	19.2	2.0	3.0	24.2	T	AMD
Laurel Run	UNT 26671 to Anderson Creek	CWF	-	-	5.1	5.1	T	AMD
Left Fork Otter Run	UNT 64620 to Moshannon Creek	CWF	-	-	5.4	5.4	T	AMD
Lick Run	Source to Otter Run	CWF	-	1.5	-	1.5	-	AMD
Little Anderson Creek	Source to West Branch	HQ-CWF	3.2	4.5	3.7	11.4	T	AMD, AP
Little Birch Island Run	UNT 26695 to Anderson Creek	CWF	-	-	5.7	5.7	T	AMD
Little Bougher Run	UNT 25537 to Birch Island Run	HQ-CWF	-	-	4.3	4.3	T	AMD
Little Sandy Run	Source to West Branch	CWF	-	-	1.1	1.1	T	AMD
Little Surveyor Run	UNT 22794 to North Fork Beech Creek	CWF	-	-	2.7	2.7	T	AMD
Logway Run	Source to Surveyor Run	CWF	-	-	2.0	2.0	T	AMD
Loop Run	Source to Beech Creek	CWF	-	-	0.8	0.8	T	AMD
	UNT 25572 to West Branch	CWF	-	-	2.4	2.4	T	AMD



TABLE A-10 (continued)

## IMPAIRED REACHES IN THE WEST BRANCH SUBBASIN

STREAM -----	REACH -----	CLASS	ATTAINED	PART	NOT	ASSESSED	TOXIC?	SOURCE
Loyalsock Creek	Wyoming County line to Lycoming County line	CWF	13.0	-	25.0	38.0	T	AMD
Mackeys Run	UNT 19731 to The Outlet	HQ-CWF	1.1	0.5	-	1.6	-	AP
Marsh Creek	Source to Straight Run	WWF	10.9	-	3.3	14.2	-	MW
Marsh Creek	Straight Run to Pine Creek	TSF	1.4	-	1.8	3.2	-	MW
Middle Branch Two Mile Run	Source to Two Mile Run	HQ-TSF	-	-	2.1	2.1	T	AMD
Montgomery Creek	Clearfield Reservoir to West Branch	CWF	0.7	-	2.2	2.9	T	AMD
Moshannon Creek	UNT 25911 to West Branch	TSF	3.4	-	52.4	55.8	T	AMD
Mosquito Creek	Elk County line to West Branch	HQ-CWF	11.3	-	6.0	17.3	T	AMD
North Fork Beech Creek	UNT 22797 to Beech Creek	CWF	-	-	5.9	5.9	T	AMD
Otter Run	Right Fork Otter Run to Little Pine Creek	CWF	-	-	3.8	3.8	T	AMD
Red Run	UNT 20783 to Lycoming Creek	CWF	-	-	3.9	3.9	T	AMD
Right Fork Otter Run	UNT 21264 to Otter Run	CWF	-	0.4	-	0.4	-	AMD
Saltlick Run	UNT 25619 to West Branch	HQ-CWF	-	-	1.5	1.5	T	AMD
Sandy Run	UNT 23629 to Drury Run	HQ-CWF	2.2	1.0	-	3.2	-	AMD
Sinnemahoning Creek	Bennett/Driftwood Branches to Clinton County line	WWF	-	-	6.7	6.7	T	AMD
Sinnemahoning Creek	Cameron County line to West Branch	WWF	-	-	9.1	9.1	T	AMD
Slab Cabin Run	PA 26 to Spring Creek	CWF	5.3	-	1.0	6.3	-	MW
Spring Creek	UNT 23089 to Bald Eagle Creek	CWF	3.0	21.5	-	24.5	T	IW
Sterling Run	Miles Run to West Branch	HQ-CWF	-	-	7.2	7.2	T	AMD
Stony Run	Source to Drury Run	HQ-CWF	2.0	-	1.3	3.3	T	AMD
Surveyor Run	Source to West Branch	CWF	-	-	4.0	4.0	T	AMD
Tangascootack Creek	UNT 23383 to West Branch	CWF	-	8.4	-	8.4	-	AMD
Trout Run	UNT 26076 to West Branch	HQ-CWF	8.8	5.0	-	13.8	-	AMD
Two Mile Run	Middle Branch Two Mile Run to Kettle Creek	HQ-TSF	-	-	1.9	1.9	T	AMD
West Branch Susquehanna River	UNT 27283 to Clearfield County line	WWF	-	-	13.5	13.5	T	AMD
West Branch Susquehanna River	Cambria County line to Clinton County line	WWF	24.9	20.4	52.5	97.8	T	AMD

TABLE A-10 (continued)

## IMPAIRED REACHES IN THE WEST BRANCH SUBBASIN

STREAM	REACH	CLASS	ATTAINED	PART	NOT	ASSESSED	TOXIC?	SOURCE
West Branch Susquehanna River	Clearfield County line to Clinton County line	WWF	-	-	12.3	12.3	T	AMD
West Branch Susquehanna River	Clearfield County line to Lycoming County line	WWF	8.9	-	50.6	59.5	T	AMD
Wilson Creek	Source to Babb Creek	CWF	9.3	-	2.3	11.6	T	AMD
Woodley Draft	Source to Drury Run	HQ-CWF	-	-	1.7	1.7	T	AMD
		TOTAL	182.3	96.8	477.4	756.5		

TABLE A-11

## IMPAIRED REACHES IN THE JUNIATA SUBBASIN

STREAM	REACH	CLASS	ATTAINED	PART	NOT	ASSESSED	TOXIC?	SOURCE
Adams Run	Source to Dunning Creek	WWF	3.4	1.3	-	4.7	-	MW
Beaverdam Branch	Source to Frankstown Branch	WWF	-	-	14.0	14.0	-	MW
Blair Gap Run	Source to Beaverdam Branch	WWF	9.1	-	0.4	9.5	-	MW
Burgoon Run	Lake Altoona to Beaverdam Branch	WWF	-	-	3.0	3.0	T	AMD
Frankstown Branch	Halter Creek to Piney Creek	WWF	-	12.0	-	12.0	-	IW, MW
Great Trough Creek	Bedford County line to Raystown Branch	TSF	24.1	-	3.0	27.1	-	MW
Halter Creek	Source to Blair County line	WWF	-	-	2.8	2.8	-	IW
Halter Creek	Bedford County line to Frankstown Branch	WWF	-	6.6	-	6.6	-	IW
Jacks Creek	Meadow Creek to Juniata River	TSF	6.3	2.0	-	8.3	T	IW
Kishacoquillas Creek	Source to Tea Creek	TSF	12.6	-	5.0	17.6	-	AGR
Kishacoquillas Creek	Tea Creek to Juniata River	TSF	4.1	-	2.7	6.8	T	IW, MW
Little Juniata River	Source to Huntingdon County line	TSF	10.0	6.0	2.0	18.0	-	IW, MW
Plum Creek	Source to Halter Creek	WWF	3.1	2.0	1.5	6.6	-	MW
Sugar Run	Source to Little Juniata River	WWF	-	-	2.5	2.5	-	IW
Sugar Run	Source to Beaverdam Branch	WWF	-	-	6.3	6.3	-	AMD
Yellow Creek	Blair County line to Raystown Branch	HQ-CWF	15.7	4.0	-	19.7	-	MW
		TOTAL	88.4	33.9	43.2	165.5		

TABLE A-12

## IMPAIRED REACHES IN THE LOWER SUSQUEHANNA SUBBASIN

STREAM	REACH	CLASS	ATTAINED PART	NOT	ASSESSED	TOXIC?	SOURCE
-----	-----	-----	-----	-----	-----	-----	-----
Bear Creek	UNT 17043 to Wiconisco Creek	CWF	-	4.4	4.4	T	AMD
Beaver Creek	Adams County line to West Conewago Creek	WWF	1.4	1.0	2.9	-	MW
Beaver Creek	York County line to West Conewago Creek	WWF	1.5	1.0	2.9	-	MW
Beaver Creek	Source to Adams County line	WWF	-	-	0.5	-	MW
Big Beaver Creek	Quarryville STP to Pequea Creek	TSF	6.9	0.5	8.0	-	MW
Bowers Run	Mile 0.9 to West Conewago Creek	WWF	-	0.5	0.9	-	MW
Carbon Run	UNT 18649 to Shamokin Creek	CWF	-	3.7	3.7	T	AMD
Chickies Creek	Lebanon County line to Susquehanna River	WWF	2.9	-	29.9	-	AGR
Coal Run	Gebhard Run to Middle Creek	CWF	-	1.6	1.6	T	AMD
Coal Run	Source to Shamokin Creek	CWF	-	3.0	3.0	T	AMD
Cocalico Creek	Blue Lake to Conestoga Creek	WWF	21.3	-	26.6	-	AGR
Codorus Creek	Oil Creek to Susquehanna River	WWF	-	4.0	25.0	-	IW
Conestoga Creek	Source to Susquehanna River	WWF	35.0	-	60.0	-	AGR
Conodoguinet Creek	Franklin County line to Susquehanna River	WWF	60.7	-	69.7	-	MW
Crab Run	UNT 17672 to Mahanoy Creek	CWF	-	1.3	1.3	T	AMD
Deep Creek	Source to Pine Creek	CWF	17.7	-	22.2	-	AMD
Doc Smith Run	UNT 17020 to West Branch Rattling Creek	HQ-CWF	-	1.5	1.5	T	AMD
East Branch	Christiana to Octoraro Lake	TSF	14.9	-	16.9	-	MW
Octoraro Creek	UNT 17040 to Rattling Creek	HQ-CWF	-	3.8	3.8	T	AMD
East Branch	UNT 17269 to Rausch Creek	CWF	-	1.9	1.9	T	AMD
Rattling Creek	Lebanon County line to Susquehanna River	TSF	16.8	-	18.6	-	MW
Rausch Creek	Source to Coal Run	CWF	-	1.9	1.9	T	AMD
East Conewago Creek	UNT 10082 to Middle Creek	CWF	-	5.0	5.0	T	AMD
Gebhard Run	Source to Mahanoy Creek	WWF	4.5	-	6.5	T	AMD
Good Spring Creek	Berks County line to Muddy Creek	TSF	2.0	-	7.0	-	MW
Little Mahanoy Creek	Source to Muddy Creek	TSF	-	-	3.3	-	MW
Little Muddy Creek	UNT 18656 to Shamokin Creek	CWF	-	1.6	1.6	T	AMD
Locust Creek	Stumps Run to Lower Rausch Creek	CWF	-	1.7	1.7	T	AMD
Lorberry Creek	Source to Swatara Creek	CWF	-	3.9	3.9	T	AMD
Lower Rausch Creek	Source to Northumberland County line	WWF	-	26.8	26.8	T	AMD
Mahanoy Creek							

TABLE A-12 (continued)

## IMPAIRED REACHES IN THE LOWER SUSQUEHANNA SUBBASIN (continued)

STREAM	REACH	CLASS	ATTAINED	PART	NOT	ASSESSED	TOXIC?	SOURCE
-----	-----	-----	-----	-----	-----	-----	-----	-----
Mahanoy Creek	Schuylkill County line to Susq. River	WWF	-	-	25.4	25.4	T	AMD
Manns Run	Stream mile 1.0 to Susquehanna River	WWF	-	-	1.0	1.0	-	AGR
Middle Creek	Lebanon County line to Cocalico Creek	HQ-TSF	10.3	2.0	-	12.3	-	MW
Middle Creek	Coal Run to Swatara Creek	CWF	-	-	1.1	1.1	T	AMD
Mill Creek	Source to Conestoga Creek	WWF	6.5	18.5	2.7	27.7	-	AGR, MW
Nine O'clock Run	UNT 17038 to East Branch Rattling Creek	HQ-CWF	-	-	0.6	0.6	T	AMD
North Branch	Source to Shamokin Creek	CWF	-	-	4.6	4.6	T	AMD
Shamokin Creek								
North Mahanoy Creek	UNT 17692 to Mahanoy Creek	CWF	-	-	5.5	5.5	T	AMD
Panther Creek	Source to Swatara Creek	CWF	-	-	1.8	1.8	T	AMD
Paxton Creek	Source to Susquehanna River	WWF	7.9	2.0	2.9	12.8	-	URBRO
Pequea Creek	Source to Susquehanna River	WWF	47.3	5.0	-	52.3	-	AGR
Pine Creek	Source to Dauphin County line	CWF	14.5	-	8.3	22.8	T	AMD
Poplar Creek	Source to Good Spring Creek	CWF	-	-	0.9	0.9	T	AMD
Quaker Run	UNT 18653 to Shamokin Creek	CWF	-	-	1.3	1.3	T	AMD
Quittapahilla Creek	Source to Swatara Creek	TSF	1.0	10.6	4.9	16.5	-	AGR, IW
Rattling Creek	East/West Branches to Wiconisco Creek	HQ-CWF	-	-	2.2	2.2	T	AMD
Rausch Creek	East/West Branches to Pine Creek	CWF	-	-	1.7	1.7	T	AMD
Shale Run	UNT 17025 to West Branch Rattling Creek	HQ-CWF	-	-	0.8	0.8	T	AMD
Shamokin Creek	Source to Susquehanna River	WWF	-	-	34.7	34.7	T	AMD
Shawnee Run	Source to Susquehanna River	WWF	6.6	-	0.9	7.5	T	IW
Shenandoah Creek	Kehly Run to Mahanoy Creek	CWF	-	-	5.0	5.0	T	AMD
South Branch	Glen Rock to Codorus Creek	WWF	4.5	10.0	-	14.5	-	AGR
Codorus Creek								
Spring Creek	US 422 to Swatara Creek	WWF	2.5	0.3	-	2.8	-	MW
Stone Cabin Run	UNT 17034 to East Branch Rattling Creek	HQ-CWF	-	-	1.8	1.8	T	AMD
Stumps Run	Source to Lorberry Creek	CWF	-	-	0.6	0.6	T	AMD
Susquehanna River	Dauphin County line to Maryland	WWF	24.2	17.0	-	41.2	-	ONS
Susquehanna River	Pennsylvania State line to Chesapeake Bay	I	10.0	5.0	-	15.0	-	ONS
Swatara Creek	Schuylkill County line to Swatara Gap	CWF	-	-	3.4	3.4	T	AMD
Swatara Creek	Source to Lebanon County line	CWF	-	-	9.8	9.8	T	AMD
West Branch	Wolf Run to Rattling Creek	HQ-CWF	-	-	5.2	5.2	T	AMD
Rattling Creek								

TABLE A-12 (continued)

## IMPAIRED REACHES IN THE LOWER SUSQUEHANNA SUBBASIN (continued)

STREAM -----	REACH -----	CLASS	ATTAINED	PART	NOT	ASSESSED	TOXIC?	SOURCE
West Branch Rausch Creek	Source to Rausch Creek	CWF	-	-	3.5	3.5	T	AMD
Wiconisco Creek	Source to Dauphin County line	WWF	-	-	6.4	6.4	T	AMD
Wiconisco Creek	Schuylkill County line to Susq. River	WWF	34.0	-	27.8	61.8	T	AMD
Zerbe Run	UNT 17643 to Mahanoy Creek	CWF	-	-	5.8	5.8	T	AMD
-----	-----	TOTAL	355.3	182.8	235.2	773.3	-----	-----



TABLE A-13

## MAJOR REACHES IN THE EASTERN SUBBASIN

STREAM	REACH	CLASS	ATTAINED	ASSESSED
-----	-----	-----	-----	-----
Butternut Creek	Source to Unadilla River	C	37.3	37.3
Catatunk Creek	Source to Owego Creek	C	13.9	13.9
Charlotte Creek	Schoharie County line to Otsego County line	C	14.2	14.2
Chenango River	Madison County line to Fly Creek	B	13.0	13.0
Chenango River	North Norwich/Norwich line to tributary #47	D	19.5	19.5
Chenango River	Chenango County line to Susquehanna River	B	10.5	10.5
Cherry Valley Creek	Source to Susquehanna River	C	29.9	29.9
Elk Creek	Source to Schenectus Creek	C	13.8	13.8
Geneganslet Creek	Source to Chenango River	C	10.9	10.9
Kortright Creek	Source to Charlotte Creek	C	10.9	10.9
Oaks Creek	Canadarago Lake to Susquehanna River	D	13.3	13.3
Otego Creek	Source to Susquehanna River	C	28.6	28.6
Otselic River	Chenango County line to Broome County line	C	15.3	15.3
Ouleout Creek	Source to Susquehanna River	C	26.2	26.2
Salt Lick Creek	Source to Susquehanna River	CWF	14.9	14.9
Sangerfield River	Oneida County line to Chenango County line	C	16.0	16.0
Schenectus Creek	Source to Susquehanna River	C	28.6	28.6
Snake Creek	Source to New York line	CWF	20.7	20.7
Susquehanna River	Otsego County line to Broome County line	B	22.1	22.1
Susquehanna River	Chenango County line to Pennsylvania line	B	20.0	20.0
Susquehanna River	3 miles downstream Owego to Pennsylvania line	C	12.0	12.0
Susquehanna River	Great Bend reach in Pennsylvania	WWF	14.7	14.7
Tioughnioga River	Cortland County line to Chenango River	B	16.9	16.9
Unadilla River	Source to Otsego County line	C	12.1	12.1
Wappasening Creek	Susquehanna County line to New York line	WWF	16.3	16.3
Wharton Creek	Source to Unadilla River	C	29.5	29.5
		-----	-----	-----
	TOTAL		481.1	481.1



TABLE A-14

## MAJOR REACHES IN THE CHEMUNG SUBBASIN

STREAM -----	REACH -----	CLASS -----	ATTAINED -----	ASSESSED -----
Bentley Creek	Source to New York state line	WWF	13.8	13.8
Chemung River	Cohocton/Tioga Rivers to Hoffman Brook	C	18.8	18.8
Cohocton River	Cohocton to trib 22	C	20.4	20.4
Cohocton River	Trib 22 to Chemung River	C	16.6	16.6
Cowanesque River	Source to North Fork	CWF	11.0	11.0
Crooked Creek	Source to Hammond Lake	WWF	24.6	24.6
Elk Run	Source to Mill Creek	TSF	10.9	10.9
Elk Run	Source to Tioga River	CWF	10.7	10.7
Five Mile Creek	Mud Lake to Cohocton River	D	11.0	11.0
Meads Creek	Source to Cohocton River	C	16.7	16.7
Mill Creek	Source to Tioga Lake	TSF	18.4	18.4
Mud Creek	Mill Pond to Cohocton River	C	11.5	11.5
Seeley Creek	Source to New York state line	CWF	10.1	10.1
Tioga River	Pennsylvania line to Chemung River	C	13.0	13.0
Troups Creek	Source to Pennsylvania line	C	14.6	14.6
	TOTAL		222.1	222.1

TABLE A-15

## MAJOR REACHES IN THE UPPER SUSQUEHANNA SUBBASIN

STREAM -----	REACH -----	CLASS -----	ATTAINED -----	ASSESSED -----
Bowman Creek	Luzerne County line to Susquehanna River	HQ-CWF	19.8	19.8
East Branch Tunkhannock Creek	Source to Tunkhannock Creek	CWF	20.4	20.4
East Branch Wyalusing Creek	Source to Wyalusing Creek	CWF	15.2	15.2
Fishing Creek	Source to Huntingdon Creek	CWF	16.9	16.9
Green Creek	Source to Fishing Creek	TSF	12.5	12.5
Harveys Creek	Pikes Creek to Susquehanna River	CWF	20.2	20.2
Huntingdon Creek	Source to Kitchen Creek	HQ-CWF	12.0	12.0
Huntingdon Creek	Kitchen Creek to Columbia County line	TSF	11.0	11.0

TABLE A-15 (continued)

## MAJOR REACHES IN THE UPPER SUSQUEHANNA SUBBASIN

STREAM	REACH	CLASS	ATTAINED	ASSESSED
-----	-----	----	-----	-----
Johnson Creek	Source to Wysox Creek	CWF	11.5	11.5
Little Fishing Creek	Source to Fishing Creek	CWF	23.2	23.2
Little Wapwallopen Creek	Source to Susquehanna River	CWF	11.7	11.7
Martin Creek	Source to Wyoming County line	CWF	18.9	18.9
Mehoopany Creek	Sullivan County line to North Fork	HQ-TSF	13.9	13.9
Meshoppen Creek	Source to Wyoming County line	CWF	20.1	20.1
Middle Branch Wyalusing Creek	Source to Wyalusing Creek	CWF	11.8	11.8
Nescopeck Creek	Source to PA 309	HQ-CWF	14.7	14.7
Nine Partners Creek	Source to Tunkhannock Creek	CWF	10.5	10.5
North Branch Towanda Creek	Source to Towanda Creek	CWF	14.5	14.5
North Branch Wyalusing Creek	Source to Wyalusing Creek	CWF	13.9	13.9
Roaring Brook	Source to Lackawanna River	CWF	20.9	20.9
Roaring Creek	Source to Montour County line	TSF	19.0	19.0
Shickshinny Creek	Source to Susquehanna River	CWF	10.3	10.3
South Branch Roaring Creek	Source to Northumberland County line	CWF	12.0	12.0
South Branch Towanda Creek	Source to Towanda Creek	CWF	16.4	16.4
South Branch Tunkhannock Creek	Source to Wyoming County line	CWF	16.3	16.3
Spring Brook	UNT 28437 to NE Ext. PA Turnpike	HQ-CWF	14.9	14.9
Sugar Creek	Tomjack Creek to Susquehanna River	WWF	11.6	11.6
Sugar Creek	Source to Tomjack Creek	TSF	20.6	20.6
Susquehanna River	Bradford County line to Lackawanna County line	WWF	39.7	39.7
Susquehanna River	Luzerne County line to Montour County line	WWF	17.8	17.8
Tomjack Creek	Source to Sugar Creek	TSF	11.1	11.1
Towanda Creek	Canton Borough to South Branch Towanda Creek	TSF	25.6	25.6
Tunkhannock Creek	Susquehanna County line to South Branch Tunkhannock Creek	WWF	13.1	13.1
Tunkhannock Creek	Source to Wyoming County line	WWF	22.8	22.8
Wapwallopen Creek	Source to Susquehanna River	CWF	25.3	25.3
Wysox Creek	Source to Susquehanna River	CWF	14.5	14.5
	TOTAL	----	604.6	604.6

TABLE A-16

## MAJOR REACHES IN THE WEST BRANCH SUBBASIN

STREAM -----	REACH -----	CLASS	ATTAINED	ASSESSED
Bald Eagle Creek	Big Hollow to Laurel Run	CWF	13.7	13.7
Bald Eagle Creek	Laurel Run to Nittany Creek	TSF	13.9	13.9
Bald Eagle Creek	Nittany Creek to Beech Creek	WWF	13.8	13.8
Bald Eagle Creek	Beech Creek to West Branch Susquehanna River	WWF	12.4	12.4
Beaverdam Run	UNT 26457 to Clearfield Creek	CWF	10.1	10.1
Blockhouse Creek	Tioga County line to Little Pine Creek	CWF	10.9	10.9
Buffalo Run	UNT 22995 to Spring Creek	CWF	12.8	12.8
Chest Creek	Laurel Lick Run to Clearfield County line	CWF	16.5	16.5
Chest Creek	Cambria County line to West Branch Susquehanna River	CWF	16.6	16.6
Cross Fork	Wingetter Run to Kettle Creek	HQ-TSF	10.2	10.2
Dents Run	Cameron County line to Bennett Branch	CWF	10.2	10.2
Driftwood Branch	Sinnemahoning Creek	TSF	31.7	31.7
Sinnemahoning Creek	Robinson Run to Sinnemahoning Creek			
East Fork	Dolliver Trail to First Fork Sinnemahoning Creek	HQ-CWF	14.0	14.0
Sinnemahoning Creek	Prouty Run to Cameron County line	HQ-CWF	18.7	18.7
First Fork Sinnemahoning Creek	Potter County line to Sinnemahoning Creek	HQ-CWF	14.1	14.1
First Fork Sinnemahoning Creek	UNT 22557 to Long Run	HQ-CWF	37.5	37.5
Fishing Creek	UNT 24366 to First Fork Sinnemahoning Creek	HQ-CWF	10.7	10.7
Freeman Run	UNT 24896 to Bennett Branch Sinnemahoning Creek	CWF	10.6	10.6
Kersey Run	Tioga County line to Clinton County line	HQ-TSF	17.8	17.8
Kettle Creek	UNT 21119 to Second Fork Larrys Creek	HQ-CWF	15.5	15.5
Larrys Creek	Fox Run to Elk County line	HQ-CWF	11.8	11.8
Laurel Run	UNT 23324 to LR 18011	EV	14.5	14.5
Lick Run	Gazzam Run to Clearfield Creek	CWF	15.2	15.2
Little Clearfield Creek	UNT 20321 to Loyalsock Creek	CWF	18.6	18.6
Little Loyalsock Creek	Blockhouse Creek to English Run	CWF	11.8	11.8
Little Pine Creek	Sullivan County line to West Branch Susquehanna River	TSF	23.9	23.9
Loyalsock Creek				

TABLE A-16 (continued)

## MAJOR REACHES IN THE WEST BRANCH SUBBASIN

STREAM	REACH	CLASS	ATTAINED	ASSESSED
-----	-----	-----	-----	-----
Lycoming Creek	UNT 64590 to Long Run	CWF	26.2	26.2
Lyman Run	UNT 22150 to West Branch Pine Creek	HQ-CWF	13.9	13.9
Marsh Creek	UNT 22863 to Bald Eagle Creek	CWF	14.3	14.3
Mill Creek	Rush Run to Loyalsock Creek	TSF	11.5	11.5
Mill Creek	UNT 19857 to Loyalsock Creek	TSF	13.1	13.1
Mosquito Creek	Source to West Branch Susquehanna River	CWF	12.0	12.0
Paddy Run	Renz Hollow to West Branch Susquehanna River	HQ-CWF	10.3	10.3
Pine Creek	Tioga County line to West Branch Susquehanna River	HQ-TSF	37.6	37.6
Pine Creek	Marsh Creek to Lycoming County line	HQ-TSF	18.2	18.2
Pine Creek	Potter County line to Marsh Creek	TSF	11.2	11.2
Pine Creek	UNT 22341 to South Branch Pine Creek	HQ-CWF	13.9	13.9
Rapid Run	Yankee Run to Buffalo Creek	HQ-CWF	13.3	13.3
Rock Run	Sullivan County line to Lycoming Creek	HQ-CWF	10.7	10.7
Slate Lick Run	UNT 26432 to Beaverdam Run	CWF	10.0	10.0
South Fork Beech Creek	Brushy Hollow to Beech Creek	CWF	11.1	11.1
Spruce Run	UNT 18993 to Buffalo Creek	HQ-CWF	11.7	11.7
Stony Run	Source to Loyalsock Creek	CWF	12.0	12.0
Trout Run	UNT 24771 to Bennett Branch Sinnemahoning Creek	CWF	10.9	10.9
West Branch Pine Creek	UNT 22199 to Pine Creek	HQ-CWF	16.4	16.4
West Branch Susquehanna River	Clinton County line to Northumberland County line	WWF	36.1	36.1
West Branch Susquehanna River	Lycoming County line to Susquehanna River	WWF	22.0	22.0
West Creek	Elk County line to Driftwood Branch Sinnemahoning Creek	HQ-CWF	11.5	11.5
Young Womans Creek	Baldwin Branch to West Branch Susquehanna River	HQ-CWF	11.2	11.2
		TOTAL	766.6	766.6

TABLE A-17

## MAJOR REACHES IN THE JUNIATA SUBBASIN

STREAM	REACH	CLASS	ATTAINED	ASSESSED
Aughwick Creek	Source to Juniata River	TSF	30.2	30.2
Blacklog Creek	Juniata County line to Shade Creek	HQ-CWF	14.9	14.9
Bobs Creek	Blair County line to Dunning Creek	CWF	16.0	16.0
Brush Creek	Source to Bedford County line	HQ-CWF	11.4	11.4
Brush Creek	Fulton County line to Raystown Branch	WWF	12.9	12.9
Buffalo Creek	Source to Juniata River	HQ-CWF	30.8	30.8
Clear Creek	UNT 14409 to Raystown Branch	TSF	10.5	10.5
Clover Creek	Source to Frankstown Branch	HQ-CWF	23.7	23.7
Cocalamus Creek	Snyder County line to Perry County line	TSF	14.0	14.0
Cove Creek	Source to Raystown Branch	CWF	20.1	20.1
Crooked Creek	Source to Juniata River	WWF	11.0	11.0
Dunning Creek	Source to Raystown Branch	WWF	27.4	27.4
East Branch Standing Stone Creek	UNT 15430 to Standing Stone Creek	HQ-CWF	11.2	11.2
Frankstown Branch Juniata River	Piney Creek to Huntingdon County line	TSF	14.7	14.7
Frankstown Branch Juniata River	Beaverdam Creek to Halter Creek	TSF	14.8	14.8
Honey Creek	Snyder County line to Laurel Creek	HQ-CWF	16.1	16.1
Juniata River	Source to Mifflin County line	WWF	23.3	23.3
Juniata River	Huntingdon County line to Huntingdon County line	WWF	38.3	38.3
Juniata River	Juniata County line to Perry County line	WWF	23.3	23.3
Juniata River	Perry County line to Susquehanna River	WWF	18.5	18.5
Laurel Creek	Centre County line to Honey Creek	HQ-CWF	12.5	12.5
Laurel Run	UNT 15472 to Standing Stone Creek	HQ-CWF	10.4	10.4
Little Trough Creek	Source to Great Trough Creek	TSF	13.3	13.3
Mill Run	UNT 16415 to Frankstown Branch	WWF	14.2	14.2
Piney Creek	UNT 16246 to Frankstown Branch	HQ-CWF	12.9	12.9
Raccoon Creek	UNT 11745 to Juniata River	CWF	10.8	10.8
Raystown Branch Juniata River	Somerset County line to Huntingdon County line	TSF	81.9	81.9
Raystown Branch Juniata River	Bedford County line to Juniata River	WWF	35.0	35.0



TABLE A-17 (continued)

## MAJOR REACHES IN THE JUNIATA SUBBASIN

STREAM -----	REACH -----	CLASS -----	ATTAINED -----	ASSESSED -----
Shaffer Creek	Source to Brush Creek	WWE	12.9	12.9
Shaver Creek	Source to Juniata River	HQ-CWF	19.0	19.0
Sideling Hill Creek	Source Huntingdon County line	HQ-CWF	12.1	12.1
Sideling Hill Creek	UNT 13131 to Huntingdon County line	HQ-CWF	10.1	10.1
Sinking Run	Source to Huntingdon County line	CWF	12.7	12.7
Smith Run	UNT 13292 to Juniata River	TSF	10.1	10.1
South Branch Little Aughwick Creek	Source to Little Aughwick Creek	TSF	13.8	13.8
South Branch Little Aughwick Creek	UNT 13205 to Little Aughwick Creek	HQ-CWF	13.2	13.2
Spruce Creek	Centre County line to Little Juniata River	HQ-CWF	13.0	13.0
Standing Stone Creek	Centre County line to Juniata River	HQ-CWF	33.1	33.1
Three Springs Creek	Source to Aughwick Creek	CWF	11.3	11.3
Treaster Run	Source to Honey Creek	HQ-CWF	13.7	13.7
Tuscarora Creek	Huntingdon County line to Juniata River	CWF	45.4	45.4
Wooden Bridge Creek	Source to Sideling Hill Creek	HQ-CWF	15.5	15.5
		-----	-----	-----
		TOTAL	810.0	810.0



TABLE A-18

## MAJOR REACHES IN THE LOWER SUSQUEHANNA SUBBASIN

STREAM -----	REACH -----	CLASS -----	ATTAINED -----	ASSESSED -----
Armstrong Creek	Source to Susquehanna River	TSF	14.8	14.8
Bermudian Creek	Source to York County line	WWF	15.6	15.6
Broad Creek	Source to Susquehanna River	I	16.0	16.0
Clark Creek	Source to Susquehanna River	HQ-CWF	29.8	29.8
Conodoguinet Creek	Roxbury to Cumberland County line	WWF	13.6	13.6
Conodoguinet Creek	Source to Letterkenny Reservoir	HQ-CWF	16.3	16.3
Conowingo Creek	Source to Maryland State line	CWF	15.6	15.6
Conoy Creek	UNT 8294 to Susquehanna River	TSF	10.2	10.2
Deer Creek	Pennsylvania State line to Susquehanna River	III	44.5	44.5
East Branch Codorus Creek	Source to South Branch Codorus Creek	CWF	13.8	13.8
East Mahantango Creek	Source to Pine Creek	CWF	18.0	18.0
Elk Creek	Source to Pine Creek	CWF	18.9	18.9
Fishing Creek	UNT 7266 to Susquehanna River	HQ-CWF	10.9	10.9
Fishing Creek	UNT 10898 to Susquehanna River	CWF	10.7	10.7
Fishing Creek	UNT 10929 to Susquehanna River	WWF	10.8	10.8
Hammer Creek	Speedwell Forge Dam to Cocalico Creek	TSF	19.4	19.4
Kreutz Creek	Source to Susquehanna River	HQ-CWF	17.6	17.6
Laurel Run	Source to Sherman Creek	CWF	17.7	17.7
Little Chickies Creek	UNT 7974 to Chickies Creek	TSF	17.1	17.1
Little Conestoga Creek	Source to Conestoga Creek	WWF	19.8	19.8
Little Conewago Creek	Source to West Conewago Creek	TSF	23.9	23.9
Little Juniata Creek	Source to Susquehanna River	CWF	15.9	15.9
Little Shamokin Creek	Source to Shamokin Creek	CWF	12.7	12.7
Little Swatara Creek	Berks County Line to Swatara Creek	WWF	10.7	10.7
Little Swatara Creek	Source to Lebanon County line	WWF	14.8	14.8
Little Wiconisco Creek	UNT 16935 to Wiconisco Creek	WWF	11.7	11.7
Lower Little Swatara Creek	Source to Swatara Creek	WWF	12.0	12.0
Manada Creek	Source to Swatara Creek	WWF	15.2	15.2
Middle Creek	Source to Penns Creek	WWF	35.9	35.9
Mountain Creek	Adams County line to Yellow Breeches Creek	TSF	13.9	13.9
Muddy Creek	Muddy Creek Forks to Susquehanna River	TSF	16.7	16.7
Muddy Creek	Little Muddy Creek to Conestoga Creek	WWF	15.4	15.4
Muddy Run	UNT 10767 to Conodoguinet Creek	WWF	12.3	12.3

TABLE A-18 (continued)

## MAJOR REACHES IN THE LOWER SUSQUEHANNA SUBBASIN

STREAM -----	REACH -----	CLASS -----	ATTAINED -----	ASSESSED -----
North Branch Bermudian Creek	Source to Bermudian Creek	WWF	11.8	11.8
North Branch Mahantango Creek	Source to West Mahantango Creek	TSF	13.3	13.3
North Branch Muddy Creek	Source to South Branch Muddy Creek	CWF	11.8	11.8
Opossum Creek	Source to West Conewago Creek	TSF	11.5	11.5
Penns Creek	Union County line to Susquehanna River	WWF	17.9	17.9
Penns Creek	Mifflin County line to Laurel Run	HQ-CWF	11.7	11.7
Penns Creek	Pine Creek to Mifflin County line	HQ-CWF	15.8	15.8
Penns Creek	Source to Pine Creek	CWF	12.4	12.4
Pine Creek	Source to Penns Creek	CWF	20.4	20.4
Powell Creek	North/South Forks to Susquehanna River	TSF	16.2	16.2
Schwaben Run	Source to Mahanoy Creek	WWF	11.4	11.4
Sherman Creek	Cisna Run Village to Susquehanna River	WWF	38.0	38.0
Sherman Creek	Source to Cisna Run Village	CWF	17.4	17.4
Sinking Creek	Source to Penns Creek	CWF	19.6	19.6
South Branch Conewago Creek	York County line to West Conewago Creek	WWF	16.6	16.6
South Branch Muddy Creek	Source to North Branch Muddy Creek	HQ-CWF	10.1	10.1
Susquehanna River	Northumberland County line to Lancaster County	WWF	48.3	48.3
Swatara Creek	Lebanon County line to Susquehanna River	WWF	20.3	20.3
Swatara Creek	Swatara Gap to Dauphin County line	WWF	38.2	38.2
Upper Little Swatara Creek	Source to Swatara Creek	WWF	10.9	10.9
West Branch Codorus Creek	Source to Codorus Creek	WWF	14.1	14.1
West Branch Octoraro Creek	Source to Octoraro Lake	HQ-CWF	19.7	19.7
West Conewago Creek	Adams County line to Susquehanna River	WWF	42.8	42.8
West Conewago Creek	Opossum Creek to York County line	TSF	23.7	23.7
Yellow Breeches Creek	Cumberland County line to Susquehanna River	CWF	24.1	24.1
Yellow Breeches Creek	Mountain Creek to York County line	CWF	10.6	10.6
Yellow Breeches Creek	Source to Mountain Creek	HQ-CWF	23.7	23.7
		-----	-----	-----
		TOTAL	1094.5	1094.5











